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National Field Research Center, Inc, Iowa City, Iowa

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A National Environmental/Energy Workforce Assessment

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16. ABSTRACT

This study is one of 70 volumes assessing the workforce needs (manpower needs) for pollution control and abatement in the United States for the five-year period of 1976 through 1981. Seven fields for pollution control — air, noise, pesticides, potable water, radiation, solid waste, and wastewater — are analyzed, together with energy-related programs currently accentuated by the national effort to solve energy supply problems.

Designed as Phase I of a three-phase program, the complete assessment includes the following volumes: one each for the 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands; one for each of the ten EPA regions; a one-volume National Abstract; a volume on National Legislation; a volume on Business and Industry; and a four-volume National Summary. The information was gathered through extensive personal interviews with responsible federal, state, and local officials in every state; with officials of representative private industrial and commercial firms; and with representatives of national industrial and trade organizations.

Phase II will develop a broad national inventory of the entire range of post-secondary and higher education training offered in the pollution control and energy areas cited above, and Phase III will offer demonstrations for curriculum changes or modifications which appear necessary to assure an adequate and properly trained national environmental/energy workforce.

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PREFACE

The research and development of the NATIONAL ENVIRONMENTAL/ENERGY WORKFORCE ASSESSMENT project was conducted under the aegis of the U.S. Environmental Protection Agency by the National Field Research Center, Inc., Iowa City, Iowa, and the Denver Regional Office. This report is a summary of the state of New Mexico and is one of five state reports within Federal Region VI.

The State of New Mexico Report presents an overview of the current workforce, projections of workforce requirements (1976-1981), training and certification, and, career potential in environmental pollution control and abatement. The environmental areas depicted within this report are: air, noise, potable water, pesticides, solid waste, waste water, and energy conservation/conversion.

FOREWORD

This state report is a summary of Phase I of the NATIONAL ENVIRONMENTAL/ENERGY WORKFORCE ASSESSMENT project in New Mexico. The information contained within this report was obtained by extensive on-site interviews and research of project related materials. The information retrieval was conducted through representative federal, state, and when time allowed, local agencies. Telephone and written surveys were utilized as a secondary research source.

Data which is not documented herein is representative of the best professional judgements of experts currently working in the field.

This study is designed specifically for use as a reference tool at the federal regional level as well as at the state level. It is anticipated that the people of the state of New Mexico will be the beneficiaries of this endeavor.

National Environmental Energy Workforce Assessment

Phase I

NEW MEXICO

State Summary

I. AIR

Although air pollution problems do exist in New Mexico, the state has large areas in which air is of pristine quality. There are several large industrial facilities which account for some of the air pollution problems.

The larger metropolitan areas of New Mexico also have existing air pollution problems. The city of Albuquerque exceeds federal ambient air standards for the pollutants carbon monoxide, photo chemical oxidants and particulate matter. The problems associated with Albuquerque effect the state's largest concentration of people and are due almost entirely to transportation activities.

The primary responsibilities for air pollution control in the state have been allocated to the Environmental Improvement Agency (E.I.A.) and to the Albuquerque Department of Environmental Health. The Air Quality Division of the E.I.A. administers the state component.

Overall, career opportunities in air pollution control in New Mexico will be limited. From the information presently available, it would appear that the potential careers in this environmental area will be primarily at the degreed level. The most promising opportunities relative to salary and upward mobility most likely will be with private industry in New Mexico.

II. NOISE

Presently there is no state allocated responsibility for the area of noise pollution control and abatement in the State of New Mexico. If a responsibility were to be defined for the state, it would be allocated to the Environmental Improvement Agency (E.I.A.), the Occupational Health and Radiation Division. Noise control is recognized as an environmental problem area. Other than occupationally related noise in the workplace, however, there is no functioning program at present.

The present workforce defined as associated with the area of noise pollution control and abatement, is at the local level. There are three cities in the state that have municipal noise ordinances: Gallup, Los Alamos, and Albuquerque.

Noise is recognized as a potential problem in New Mexico. At present, however, the state is sparsely populated and is described as relatively quiet. As industrialization increases and energy resources are developed within New Mexico, the noise levels will increase. Under these conditions it would seem reasonable that the workforce picture, especially at the local level, will experience a slight increase over the next five years.

Career opportunities within the noise field in New Mexico will be rather limited over the next few years. Most of the available occupations require a degree. Most probably, these jobs will be highly competitive, especially in the early states of development.

III. PESTICIDES

In 1973 the existing pesticide legislation was repealed with the passage of the New Mexico Pesticide Control Act. This Act also served to combine the pesticides related regulatory functions which had been administered through the Department of Agriculture and the Health and Social Services Department Environmental Improvement Agency (E.I.A.). Subsequently the Department created the Division of Pesticide Management.

The Department maintains cooperative agreements with other federal and state agencies. Examples include: the U.S. Environmental Protection Agency (EPA), the New Mexico State Chemist, New Mexico Environmental Improvement Agency (EIA), and the Albuquerque Department of Health.

Little change in staff is forecast for pesticides personnel across the state. On the federal level no increase or decrease in personnel is anticipated. At the state level a one percent to two percent per annum growth may occur. At the local level a three percent per annum growth is anticipated. The private applicator numbers will exhibit substantially no change to 1982.

Overall, the career potentials in pesticides related occupations will be limited in the state. To date, the farmers have not adopted Integrated Pest Management programs. These programs will be quite limited over the next few years, unless the farmers of the state are convinced of the benefits.

IV. POTABLE WATER

The State of New Mexico, along with several neighboring western states, is described as "water poor". The state, in other words, does not have an abundant supply of water.

Within the state, the primary responsibility for the regulation and environmental management of drinking water has been allocated to the Environmental Improvement Agency (E.I.A.), the Water Supply Program. On the local level, in Albuquerque - Bernadillo County, local food inspectors are responsible for inspecting drinking water supplies. The overall statewide workforce will experience increases over the next three to five years. For the most part, these increases will be at local and private sector levels.

To be in compliance with the Mandatory Utility Operators Certification Act, each water utility serving a population of 2,500 or more must have an operator in "responsible charge". This means the operator must be certified at the level of the utility or better.

Career opportunities will be available on the operator level in all classifications. At the degreed level, engineering will be a field which will illustrate career opportunities. Technician categories will also offer job potential.

New Mexico has indicated to the U.S. EPA its intention to assume primary enforcement authority. Increased activities associated with these new areas of responsibility foretell a challenging future in the area of drinking water for New Mexico.

V. RADIATION

Under the Radiation Protection Act, the Environmental Improvement Agency (E.I.A.) maintains a staff of radiation specialists, as part of the Occupational Health and Radiation Program. A Radiation Technical Advisory Council has been established, and consists of seven members appointed by the Governor. The Albuquerque Department of Health maintains a small staff with expertise in the area of radiation. The Albuquerque program problems are mainly associated with medical and dental x-ray.

Within the State of New Mexico the medical, industrial and educational uses of radiation are increasing. Within the last year there has been a 15% increase in x-ray machine registrants and a 10% increase in radioactive materials licenses. New Mexico experts anticipate that the medical licenses will continue to increase, due specifically to the Mason Physics Facility at Los Alamos and to the University Cancer Research Center.

Over the next few years, due to the energy crisis and a change to nuclear technology, there should be job opportunities within this field. New jobs will be created as a consequence of advancing nuclear technology and more stringent federal and state legislation. These career opportunities will be represented by: scientist, engineer and technician, specifically with nuclear and radiation expertise. The future of the radiation field promises to be most challenging.

VI. SOLID WASTE

Solid waste management is a relatively new area of endeavor for the State of New Mexico. The responsibility for the statewide solid waste management program has been allocated to the Environmental Improvement Agency (E.I.A.). The major goal of this program is to ensure proper collection, storage, transportation and disposal of all solid waste materials within the state. There are personnel within the Albuquerque - Bernadillo County Environmental Health Department who contribute to the local workforce in this environmental pollution and control area.

The private sector, ordinarily a substantial component of a solid waste profile, is not a significant factor in New Mexico, and includes approximately five percent of the total workforce. At present, several communities in New Mexico utilize the efforts of private contractors.

The staff of the Solid Waste Management Program is projected to experience little or no increase over the next three years, although the areas of responsibility are enlarging. The recent passage of the Toxic Substances Act and the Resource Conservation Act will exert pressures that should require staff increases for this program. E.I.A. personnel anticipate the possibility of an acceleration of federal construction grants activity. Inspection and evaluation of each proposed sanitary landfill is not only a necessity, but is time consuming and requires trained personnel.

VII. WASTE WATER

The primary responsibility for waste water pollution control and abatement in the State of New Mexico is with the Environmental Improvement Agency (E.I.A.), Water Pollution Control Program. Diversification of activities within the state's 12,511 square miles contribute to waste water related problems unique to an area or section of New Mexico. The problems and solutions relative to waste water and its treatment are compounded by mining and milling activities. To meet these challenges the E.I.A. established the Water Pollution Control Program.

Increases are projected for the statewide workforce to 1982. These increases will be especially manifested at the operator level. Career opportunities in the area of waste water in the State of New Mexico will be on the degreed level. Areas of study will represent: geohydrology, engineering, and environmental technology.

On the operator level, job opportunities will be available in limited numbers. The high turnover rate will encourage openings as operators leave the field.

New Mexico waters represent nearly pristine quality in the mountains and highly saline conditions in the lower areas. Across the state, however, limited quantities of stream water are able to accept waste water dilution, increasing the need for treatment.

VIII. ENERGY

New Mexico is considered an energy rich state. The plentiful supply of energy ranks New Mexico as a leading producer of oil, natural gas, uranium and coal. New Mexico ranks first in the nation in uranium production and reserves, is the fourth largest producer of natural gas and ranks fifth in reserves nationally. The San Juan Basin contains the fourth largest natural gas field in the world. Currently, the state exports 90% of it's natural gas and 66% of it's electricity.

The New Mexico Energy Resources Board, formerly known as the Energy Task Force, manages all energy policies for the State of New Mexico. The Board consists of seven members and currently (1976) has a staff of 35. The Environmental Improvement Agency in an effort to address increasing energy related problems, established an Office of Energy Activities.

The state energy plan consists of the following problem areas which were identified:

- The rising price of natural gas.
- The rising residential energy costs on low income residents.
- The adequacy of supplies of natural gas for use in state.
- The availability of transportation for the state's natural gas.
- The impact on New Mexico communities of proposed energy projects.

STATE OF NEW MEXICO - SUMMARY

National Environmental/Energy Workforce Assessment
Pollution Control & Abatement Personnel
Projected Workforce Requirements (1976-1981)
(estimated)

Environmental Area	1976	1977	1978	1979	1980	1981	%/annum growth (average)
AIR[1]	50	51	52	53	54	55	1%
NOISE	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDES[2]	1,110	1,132	1,155	1,178	1,202	1,226	2%
POTABLE WATER	451	464	478	494	509	524	3%
RADIATION[3]	520	520	521	522	523	523	N/A
SOLID WASTE	681	652	625	599	577	553	- 1%
WASTEWATER	454	466	480	495	509	523	3%
ENERGY[4]	37	38	39	40	41	42	3%
TOTALS	3,303	3,323	3,350	3,381	3,415	3,446	1%

[1]Does not include private sector.

[2]Does not include private applicators.

[3]Does not include projections for private sector.

[4]Does not include private sector projections.

EDUCATION

New Mexico has environmental and energy related post-secondary programs located in several universities and colleges across the state. The youngest state institution of higher learning is the Eastern New Mexico University. An environmental Studies curriculum is available which may lead to a Bachelor of Arts or a Bachelor of Science degree.

The University of New Mexico at Albuquerque offers a Bachelor of Engineering with an energy and power systems option. Associate programs are available in Radiologic Technology and Nuclear Medicine Technology. In cooperation with the Los Alamos Scientific Laboratory the University operates a graduate center for the advanced training of students specializing in chemistry, engineering, mathematics and physics.

The New Mexico State University at Dona Ana offers an Associate of Arts in Water Utility Operation. Also offered through the Division of Continuing Education at Dona Ana is an Associate degree in Radiologic Technology.

There are three institutes conducting environmental/energy research at the main New Mexico State University campus at Las Cruces: the Energy Research and Development Institute, the Environmental Institute and the Water Resources Research Institute.

LEGISLATION

The environmental/energy legislation for New Mexico was obtained by request from various agency personnel and through various library references. Summaries of the legislation deemed most relevant to the eight subject areas of the workforce assessment were prepared, and are included in the respective state reports. The following list of laws represents virtually all environmental legislation for the state. Only certain of the following laws were summarized; the list is presented to show, by title, the kinds of laws which have been enacted.

Environmental Improvement Act

Air Quality Control Act

Pesticide Control Act

Water Supply Construction Act

Radiation Protection Act

Highway Beautification Act

Refuse Collection and Disposal Law

Sanitary Projects Act

Utility Operators Certification Act

Water Quality Act

National Environmental Energy Workforce Assessment

Phase I

NEW MEXICO

State Report

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STATE PROFILE

New Mexico, the "Land of Enchantment", is square in shape, bounded by Mexico, Arizona, Colorado, Oklahoma, and Texas.

Presently 1,014,979 people inhabit the 121,511 square miles. The gently undulating plain is dotted with steep rocky mountains. The mean elevation is 5,700 feet.

The Navajo Indian Reservation is the largest in the state and stretches over parts of Arizona and Utah. Other Indians in the state are the Apache and the Pueblo who have a total of nineteen reservations.

Generally New Mexico has a mild climate. In the northern portion of the state, however, winter temperatures may be quite low. Cold weather in this area effects individual septic tanks and lagoons. Trickling filters and aerated sludge systems can also be effected by cold in New Mexico.

The Rio Grande and Pecos Rivers are the principal waterways. There are, however, at least six other minor rivers in the state.

New Mexico is a non-industrial state. In 1970 there were 21,000 workers in the lumbering and food products industries. There are 13,600 farms and ranches, an average of 3,544 acres each, which concentrate on production of cattle, dairy products, hay, grain and lettuce.

The mining industry is extremely important to the economy of the state. Petroleum, natural gas and potassium salt are representative of the mineral wealth of the state. New Mexico ranks second nationally in production of uranium and third in production of copper.

The state is the site of the first atomic bomb explosion. This explosion took place on July 16, 1945, at Alamagordo. Since then, under the Secretary of Defense and the Federal Energy Administration, various proving grounds and research centers have been established for the development of atomic projects and guided missles.

The "Land of Enchantment" is vast and diversified and presently invites thousands of newcomers from colder climates to become a part of the growth and development of the state. New Mexico has been described as representative of one of the last frontiers of the West.

POLLUTION CONTROL AND ABATEMENT AGENCIES

The following agencies are those which are involved with environmental programs within the state. Each narrative provides a review of the functions and activities of each agency as they related to environmental programs.

HEALTH & SOCIAL SERVICES DEPARTMENT

Environmental Improvement Agency

The State of New Mexico created the Environmental Improvement Agency (E.I.A.) in July of 1971. The agency was established with personnel from the Environmental Health Services section of the old Health Department. The E.I.A. was created by mandate of the Legislature under the Environmental Improvement Act (Chapter 277, Laws of 1971). Today, the new Environmental Improvement Agency is organizationally part of the New Mexico Health & Social Services Department, but it is a regulatory agency to enforce regulations drawn up by two independent bodies, namely the Environmental Improvement Board and the Water Quality Control Commission. The Director of the Health & Social Services Department appoints the Director of the E.I.A. and all administrative support functions are through the Department.

The Environmental Improvement Board consists of five members who are appointed by the Governor with the consent of the Senate. This Board and the Water Quality Control Commission promulgate regulations and standards which are enforced by the E.I.A.

In order to acquaint each new employee with the goals, activities and philosophy of the agency, the E.I.A. utilizes the College at Santa Fe Training Area. Each employee spends five days in this orientation training. This training is a contributing factor in developing job appreciation. The significance of this first five days is seen in the generally low turnover rate.

Environmental management and consumer protection within the state are the prime responsibilities of the E.I.A. The creation of the E.I.A. has been described as a major step forward in the development of a more efficient and effective system for maintaining and preserving the high quality of the environment of New Mexico.

STATE OF NEW MEXICO

HEALTH & SOCIAL SERVICES DEPARTMENT

Figure 1
Organizational Chart

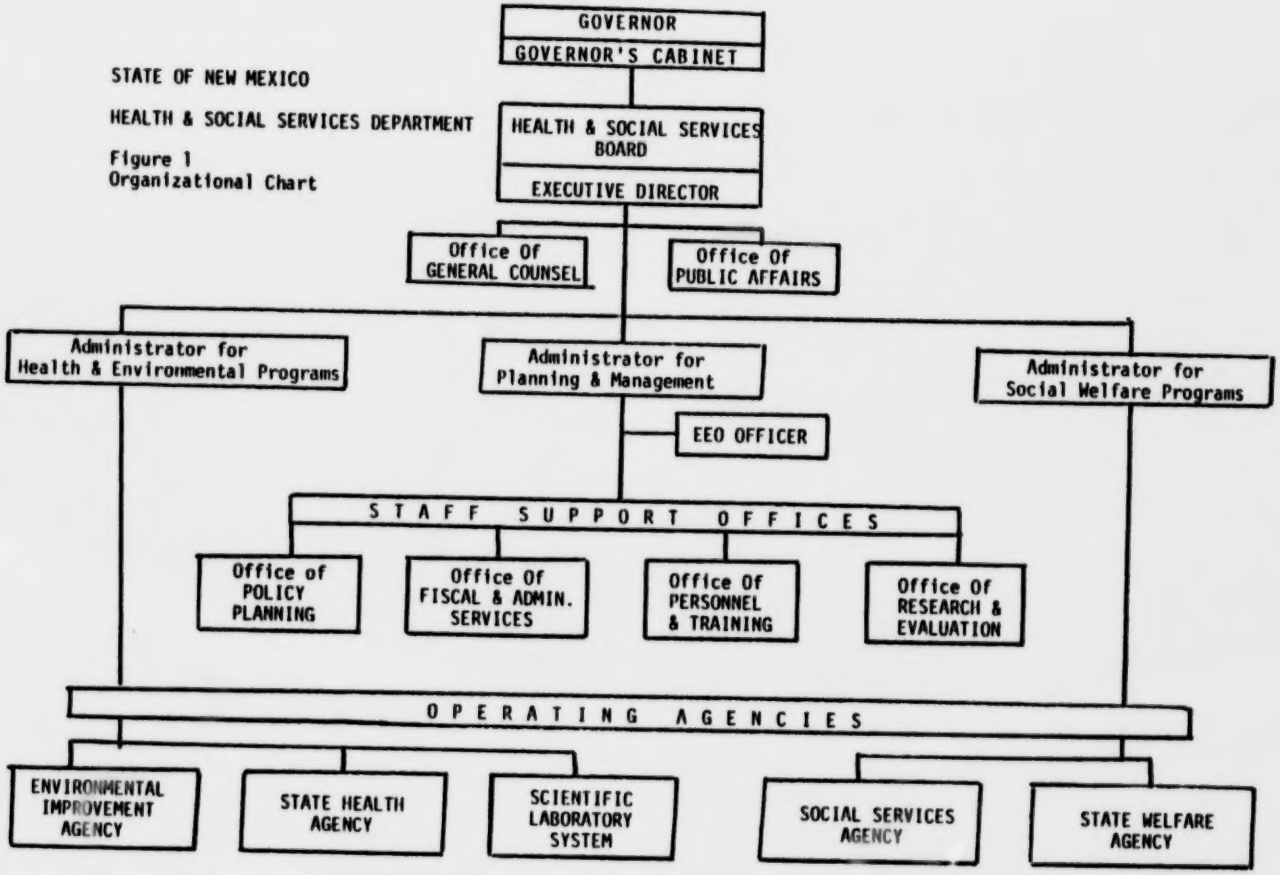
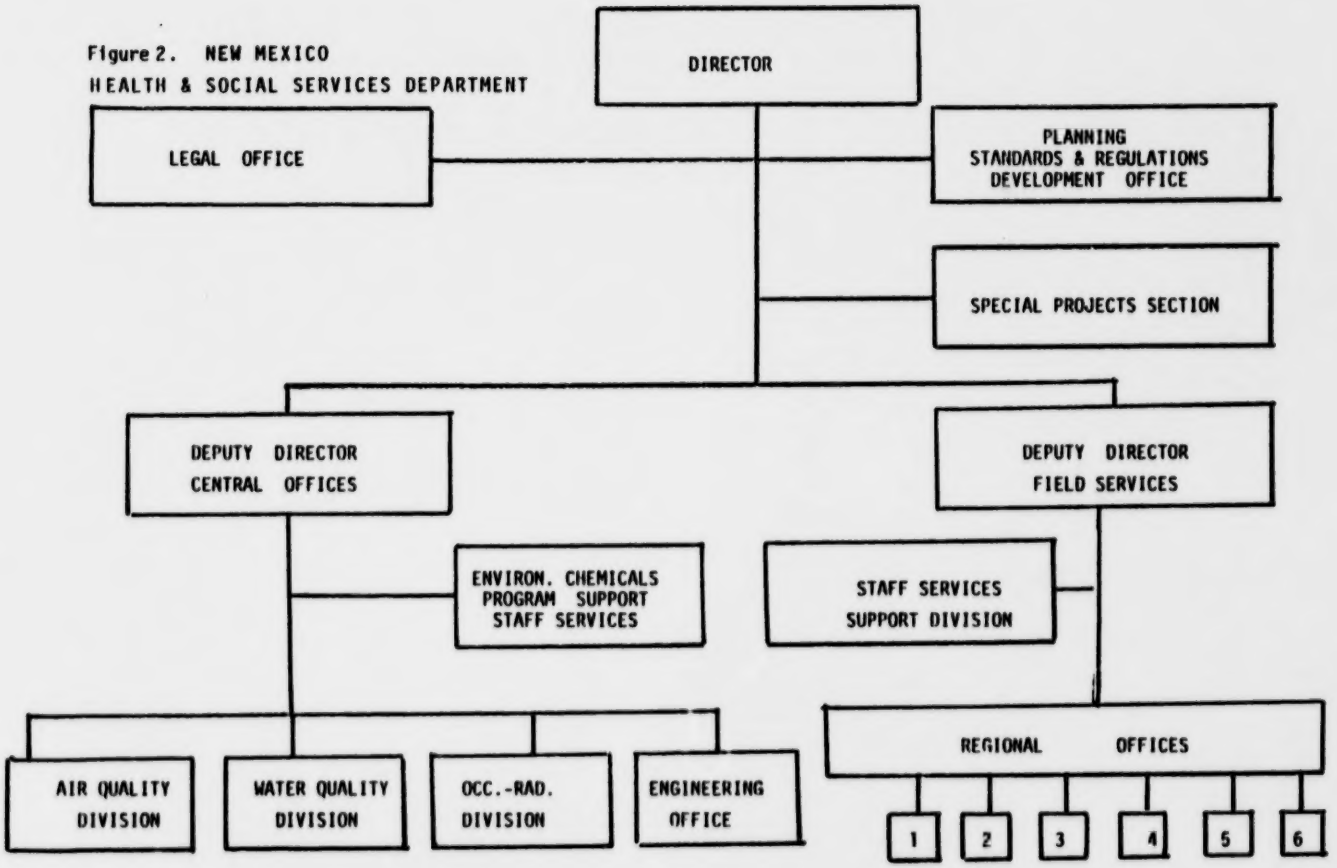


Figure 2. NEW MEXICO
HEALTH & SOCIAL SERVICES DEPARTMENT



ENVIRONMENTAL IMPROVEMENT AGENCY (EIA)

ALBUQUERQUE DEPARTMENT OF ENVIRONMENTAL HEALTH

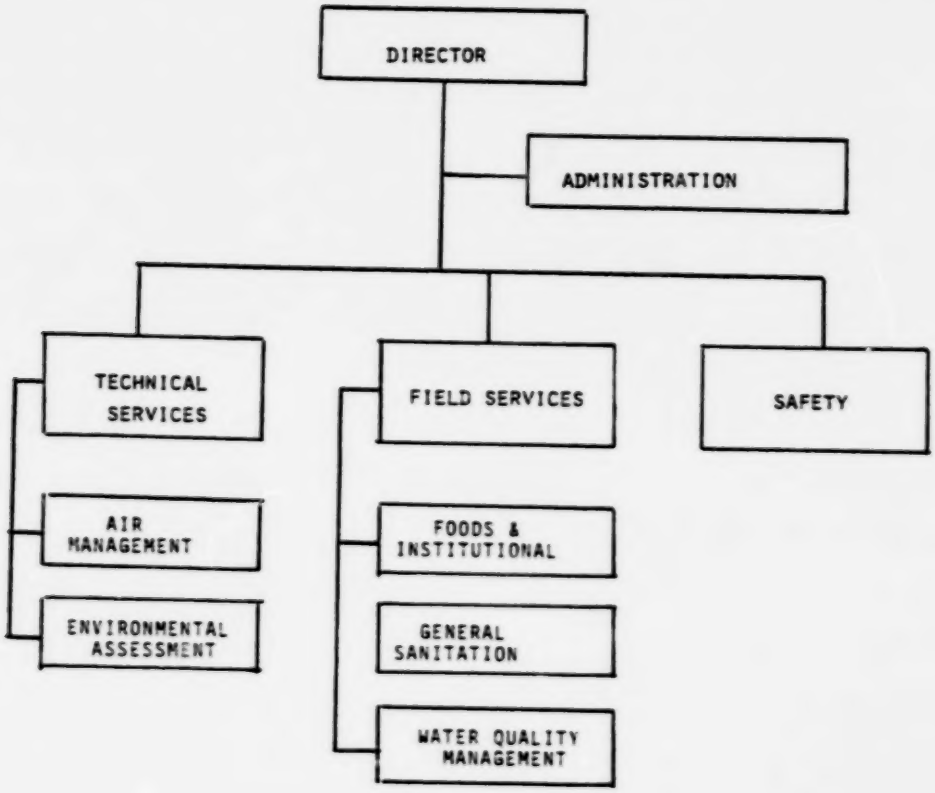
The Albuquerque Department of Environmental Health maintains a full-time staff of 43 and is charged with the responsibility of providing comprehensive environmental health services to all the citizens of the Albuquerque-Bernalillo County area.

The major areas of responsibility include programs for the control of: air pollution, hazardous products, insect and rodent populations, noise, and solid waste. Within the last year, the Department administration has been reorganized. The Safety program remained the same, but the water quality, food, and general sanitation programs have been reorganized into the Field Services Division. The air management program has now been renamed the Technical Services Division and includes Environmental Assessment.

There has been almost no expansion in the environmental area of the department over the last eight years. The turnover rate has been, is, and probably will continue to be generally low. As an indicator, the overall departmental turnover rate was approximately seven percent in 1975. The turnover rates for individual programs may be higher or lower than this overall rate.

ALBUQUERQUE DEPARTMENT OF ENVIRONMENTAL HEALTH

Figure 3

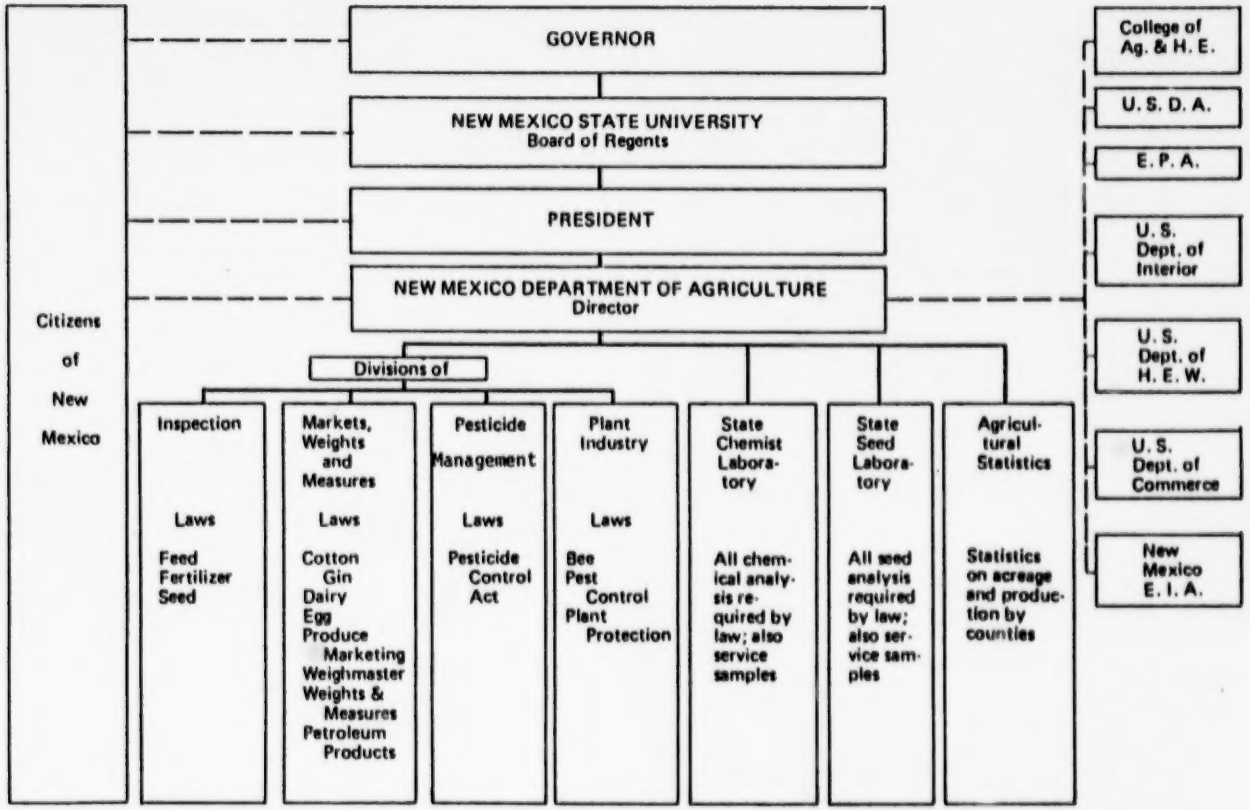


NEW MEXICO DEPARTMENT OF AGRICULTURE

By the authority of the 1911 State Constitution a Department of Agriculture was created in New Mexico. However, until 1955 that authority was loosely fulfilled. In 1955, the New Mexico State University Board of Regents created a single administrative organization by consolidating a number of regulatory services and personnel.

In 1973, the Legislature provided statutory support and additional scope of authority. Today the New Mexico Department of Agriculture is still an agent of the Board of Regents of New Mexico State University. The Department is housed in a unique 25,534 square foot building, the largest building in the nation to use solar energy for heating and cooling.

The Department of Agriculture has responsibility for nearly two dozen agricultural and consumer laws and regulations. Administration of these responsibilities is allocated to four divisions, two laboratories, and one section. The four divisions are: (1) Markets, Weights, and Measures; (2) Plant Industry; (3) Inspection; and (4) Pesticide Management. The two laboratories are: (1) State Chemical Laboratory; and (2) State Seed Laboratory. The Section is the Agricultural Statistics Section.



NEW MEXICO DEPARTMENT OF AGRICULTURE
Organizational Structure, Figure 4.

Pollution Control and Abatement Programs

I. AIR

A. Introduction

Although air pollution problems do exist in New Mexico, the state has large areas in which air is of pristine quality. There are several large industrial facilities which account for some of the air pollution problems. The Arizona Public Service Company's Four Corners Interstate Power Plant and the Kennecott copper smelter are examples.

The larger metropolitan areas of New Mexico also have existing air pollution problems. The city of Albuquerque exceeds federal ambient air standards for the pollutants carbon monoxide, photo chemical oxidants and particulate matter. The problems associated with Albuquerque affect the state's largest concentration of people and are due almost entirely to transportation activities.

The State of New Mexico has been divided into eight Air Quality Control Regions (AQCR) which are listed below. The numbers in parentheses indicate U.S. Environmental Protection Agency designations.

- Four Corners Interstate AQCR (014)
- Albuquerque - Mido Rio Grande Intrastate AQCR (152)
- Upper Rio Grande Valley Intrastate AQCR (157)
- Northeastern Plains Intrastate AWCR (154)
- Pecos - Permian Basin Intrastate AQCR (155)
- El Paso Las Cruces - Alamagordo Interstate AQCR (153)
- Arizona New Mexico Southern Border Interstate AQCR (012)
- Southwestern Mountains - Augustine Plains Interstate AQCR (156)

The establishment of these regions allows for efficient control efforts on an area wide basis. An individual source may not be a significant single problem, but in conjunction with several other individual sources may constitute serious problems.

B. Workforce Profile

The primary responsibilities for air pollution control in the state have been allocated to the Environmental Improvement Agency (E.I.A.) and to the Albuquerque Department of Environmental Health. The Air Quality Division of the E.I.A. administers the state component. The program was instituted in order to ensure that the quality of the air in New Mexico was conducive to good health, comfortable living and economic vitality.

The Air Quality Division of the E.I.A. is charged with the following responsibilities:

1) meteorology;
2) program development and planning;
3) permit review;
4) monitoring and data collection; and,
5) enforcement.

This program, overall, provides for the maximum efforts possible in order to preserve New Mexico's high quality air. Land use, water pollution, solid waste, transportation, energy, and radiation are program areas to which the Division lends technical assistance. The following table details the Air Quality Division of the Environmental Improvement Agency (E.I.A.).

TABLE I

ENVIRONMENTAL IMPROVEMENT AGENCY

Air Quality Division
Current (1976) Staffing Level

Position	1976	%/annum turnover (average)
Administrator	1	*
Program Manager & Assistant	5	1%
Attorney	1	1%
Engineer	7	1%
Engineering Assistant	3	1%
Environmental Scientist	8	1%
Environmental Technician	7	1%
Computer Programmer	1	1%
Secretarial	6	N/A
TOTAL	39	N/A

* unavailable

The New Mexico Environmental Improvement Agency (E.I.A.) has the responsibility for air pollution control programs throughout the state with the exception of the Albuquerque-Bernalillo County area. Responsibility for this specific area of the state has been designated to the Albuquerque Department of Environmental Health, Air Resources Program. The Albuquerque-Bernalillo County Air Quality Control Board is a joint board established by the City of Albuquerque and the County of Bernalillo, which is responsible for the administration and enforcement of the New Mexico Air Quality Control Act in this area. The following table depicts the staffing level of the administrative agency of the Board, the Albuquerque Department of Environmental Health.

TABLE II

ALBUQUERQUE DEPARTMENT OF ENVIRONMENTAL HEALTH

Air Resources Program
Current (1976) Staffing Level

Position	1976	%/annum turnover (average)
Program Manager	1	N/A
Engineer	2	1%
Sanitarian	1	1%
Air Management Associate	2	1%
Meterologist	1	1%
Technician	1	1%
Secretarial	3	N/A
TOTAL	11	N/A

The most difficult problems encountered by the Air Resources Program are associated with the automobile. Because of the dry climate in Albuquerque, the age of the average automobile is two years older than in any other area of the United States. Altitude substantially affects Albuquerque's emissions problems as it is more difficult to keep engines properly tuned and running efficiently at the higher altitudes.

C. Workforce Projections

The E.I.A. has indicated that the Air Quality Division staffing levels are not expected to change during the next four to five years. No increases and no decreases in workforce are anticipated during the time period 1976 to 1982. EPA Region VI has stated that there is a need for a somewhat increased workforce, however.

There have been indications that the Albuquerque Department of Health, Air Resources Program may be placed under state jurisdiction.

E.I.A. personnel estimate that four to five professionals would be required to efficiently and effectively administer this program should the consolidation occur. The following table illustrates staffing levels which would be necessary were the two programs to be integrated under the aegis of the state:

TABLE III

ENVIRONMENTAL IMPROVEMENT AGENCY
AND
ALBUQUERQUE DEPARTMENT OF ENVIRONMENTAL HEALTH

Consolidated Air Quality Programs
Workforce Projections to 1982 (est.)

Position	1976	1977	1978	1979	1980	1981	%/annum turnover (average)	%/annum growth (average)
Administrator	1	1	1	1	1	1	N/A	0%
Program Manager & Assistant	5	5	6	6	6	6	1%	4%
Attorney	1	1	1	1	1	1	1%	0%
Engineer	7	7	8	8	8	8	1%	3%
Engineering Assistant	3	3	3	3	3	3	1%	0%
Environmental Scientist	8	8	8	8	8	8	1%	0%
Environmental Technician	7	7	8	9	9	9	1%	5%
Statistician	0	0	1	1	1	1	*	20%
Computer Programmer	1	1	1	1	1	1	*	0%
Secretarial	6	6	6	6	6	6	N/A	0%
TOTAL	39	39	43	44	44	44[1]	N/A	2%

* unavailable

The above table is hypothetical but is illustrative of the E.I.A. belief that were the two programs to be consolidated, an increase in

[1] EPA Region VI has stated that this number would not fully meet EPA estimates of need.

personnel would be required. These additional staff persons would be defined as follows:

- Technician 2 full-time
- Engineer 1 full-time
- Statistician 1 full-time
- Program Manager 1 full-time

Personnel from the Albuquerque Department of Environmental Health also foresee the possibility that their program may be placed under state control. Therefore, any staff requirement projections relative only to the Albuquerque program, would be speculative at this time. Opinions on the part of departmental personnel, however, have indicated that should this program remain intact and autonomous, it would be fortunate were present staffing levels to be maintained. The exception to this feeling lies in the fact that the City of Albuquerque is proposing an automobile inspection program. Should this program be adopted by the Board, Department of Environmental Health personnel feel that an increase of 30 persons (administrative, technical, and engineering) would be necessary in order to properly conduct the new inspection program. However, actual acquisitions may not be related to these expressed needs.

D. Training and Certification

Training of air pollution control and abatement personnel has been slightly curtailed this last fiscal year in New Mexico. Funding availability is the major factor contributing to this slight decline in training efforts. The curtailment of travel funds has become a

reality in several of the western states. The following table details the training efforts on behalf of the Environmental Improvement Agency (E.I.A.) Air Quality Division for fiscal year 1976.

TABLE IV

STATE OF NEW MEXICO

Air Training Programs - FY 1976

Sponsor	Date	Length	Program	Number Trained	Number Certified
EPA	8/76	4 days	Particulate Control	1	N/A
EPA	/76	4 days	Statistical Evaluation of Air Pollution Data	1	N/A
E.I.A.	/76	12 casettes @ 1 hour	On-line training of new personnel (cassette program)	2	N/A
E.I.A.	/76	1 - 2 days each	Smoke Readers Schools (5)	5-8 per school	32*
EPA	/76	3 days	Air Quality Data Handling System	1	N/A
EPA	2/77	4 days	Observance of Stack Tests (State Personnel)	2	N/A

* This represents approximately 75% of the total number of Smoke Readers trained.

In the past, the number of persons attending the Smoke Readers Schools was substantially greater than the total number of 32 shown in the previous table. More than likely the number of participants has decreased relative to budgetary constraints. However, the E.I.A. Air Quality personnel are unsure as to the reasons. In most states, Smoke Readers must be recertified every six months. Often the required two trips per year restricts the number of persons able to attend training sessions. EPA has stated that yearly certification is required in New Mexico.

The participants in the above classes where N/A is indicated (not applicable) under the column entitled "number certified", receive a certificate of participation, but are not certified in the sense that a Smoke Reader is certified upon completion of the Smoke Reader School.

E. Career Potential

Overall, career opportunities in air pollution control in New Mexico will be limited. From the information presently available it would appear that the potential careers in this environmental area will be primarily at the degreed level. While the majority of the job opportunities will be for engineers, attorneys, chemists, increasing regulatory activities could create a need for individuals trained in short term technical courses.

The most promising opportunities relative to salary and upward mobility most likely will be with private industry in New Mexico.

F. Conclusion

The major efforts relative to air pollution control and abatement in the State of New Mexico are on the part of the state Environmental Improvement Agency and the Albuquerque Department of Environmental Health. These two agencies are responsible for protecting the overall high quality air in New Mexico. These efforts are dedicated to ensuring the health, safety and well-being of the citizens of the state. To date, few deleterious effects from air pollution have been observed in New Mexico. Of these few, the most obvious effects of air pollution are a reduction in long range visibility near the state's large stationary sources, and the observable decline in air quality in the larger cities.

Although the Four Corners Power Plant remains a major air quality problem area in New Mexico, the pollution control efforts of the last few years have resulted in most of the other existing stationary sources attaining compliance with control regulations. As with other vast and sparsely populated western states, a large percentage of the problems relate to the protection of the present high quality air.

II. NOISE

A. Introduction

Presently there is no state program in the area of noise pollution control and abatement in the State of New Mexico. If a program were to be defined for the state, it would be allocated to the Environmental Improvement Agency (E.I.A.), the Occupational Health & Radiation Division. Noise control is recognized as an environmental problem area. Other than occupationally related noise in the workplace, however, there is no functioning program at present. This is due, for the most part, to lack of funding for this activity.

B. Workforce Profile

The present workforce defined as associated with the area of noise pollution control and abatement, is at the local level. There are three cities in the state that have municipal noise ordinances: Gallup, Los Alamos, and Albuquerque. Gallup has an ordinance for nuisance and for vehicular noise. Niether of these ordinances have acoustical criteria. This makes enforcement difficult as there are no quantitative parameters. The City of Los Alamos has ordinances covering nuisance, zoning and vehicular noise. The zoning and vehicular ordinances have acoustical criteria.

The City of Albuquerque has a population of 243,751 and maintains noise ordinances without acoustical criteria in the areas of nuisance, zoning, vehicular, recreational vehicle, aircraft, and construction.

The Albuquerque Department of Environmental Health administers the noise ordinances in this city.

The table which follows details the municipal noise ordinances (1976) across the State of New Mexico.

TABLE V

STATE OF NEW MEXICO

Municipal Noise Ordinances - 1976

COMMUNITY		ORDINANCE								TOTAL		
		Aircraft	Building	Construction	Nuisance	Railroad	Vehicle	Rec./Vehicle	Zoning	a	b	
Albuquerque		b		b	b		b	b	b	0	6	6
Gallup					b		b			0	2	2
Los Alamos					b		a		a	2	1	3
TOTAL (State)	a	0	0	0	0	0	1	0	1	2	0	2
	b	1	0	1	3	0	2	1	1	0	9	9
		1	0	1	3	0	3	1	2	2	9	11

KEY: a = regulation includes accoustical criteria;
b = regulation does not include accoustical criteria.

SOURCE: Sound and Vibration, December 1976.

At present, the Technical Services Section of the Albuquerque Department of Environmental Health supports the workforce effort for the city program. The staffing for the noise related activities, includes no more than one full-time professional.

The Director of the E.I.A. Occupational Health Program has estimated that there may be 12 persons across the state working in noise pollution control and abatement.

C. Workforce Projections

Noise is recognized as a potential problem in New Mexico. At present, however, the state is sparsely populated and is described as relatively quiet. As industrialization increases and energy resources are developed within New Mexico, the noise levels will increase. Under these conditions it would seem reasonable that the workforce picture, especially at the local level, will experience a slight increase over the next five years. Due to scarcity of information, however, workforce projections in this environmental area become highly speculative.

D. Training and Certification

There is neither training nor certification in the State of New Mexico at present which is related to the environmental area of noise pollution control and abatement. In the years that follow, however, training in this area will become an ever increasing element of importance. The equipment which is utilized by noise personnel is quite technical and will involve varying degrees of training relative to operation and to maintenance.

E. Career Potential

Career opportunities within the noise field in New Mexico will be rather limited over the next few years. Most of the available occupations require a degree. Most probably these jobs will be highly competitive, especially in the early stages of program development.

F. Conclusion

Noise has been recognized as an environmental problem both nationally and internationally. New Mexico, however, presently supports a small population and is described as a non-industrialized state. Therefore, although noise problems are available for study and remediation in such areas as Albuquerque, to date a full effort has not been mounted to conduct an assessment of these existing problem areas. As New Mexico increases in population and industrialization, problems relative to noise will become apparent. New Mexico is aware that efficient long range planning and significant preventive efforts on the part of the government, private enterprise and the public at large will be the key factors in maintaining a quiet environment in the future.

III. PESTICIDES

A. Introduction

In 1973 existing pesticide legislation was repealed with the passage of the New Mexico Pesticide Control Act. This Act also served to combine the pesticides related regulatory functions which had been administered through the Department of Agriculture and the Health & Social Services Department Environmental Improvement Agency (E.I.A.). Subsequent to passage of the 1973 Act, the Department created the Division of Pesticide Management to administer the law.

The Department maintains cooperative agreements with federal and state agencies. For example, the U.S. Environmental Protection Agency maintains a field officer in Albuquerque. The Department works cooperatively also with the Extension Service personnel.

B. Workforce Profile

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) provides for the classification of all pesticides into two categories:

1) general use; and
2) restricted-use.

Only certified applicators are allowed to administer restricted-use products.

All products, pesticides, insecticides, fungicides and herbicides, must be registered with the Department before being offered for sale in New Mexico. The Division of Pesticides Management has responsibility for the regulation of all pesticide products and activities within the state. These responsibilities include not only product registration but also the following:

- product recommendation for restricted classification to the Board of Regents;
- experimental use permits;
- identification and issuance of permits for special local needs; and,
- sampling of pesticide products.

The regulations, which under the law are administered by the Pesticides Division, are designed for the health and safety of the public.

The following table illustrates the current workforce of the Pesticides Division.

TABLE VI

NEW MEXICO DEPARTMENT OF AGRICULTURE

Division of Pesticide Management
Current (1976) Staffing Level

Position	1976	%/annum turnover (average)
Chief	1	*

TABLE VI

(continued)

Position	1976	%/annum turnover (average)
Pesticide Supervisor	1	4%
Pesticide Inspector	3	4%
Predator Management Specialist	1	4%
Secretarial	2	N/A
TOTAL	8	N/A

* unavailable

The State Chemist is responsible for conducting laboratory analysis of official samples. The State Chemist has many responsibilities other than the area of pesticides and therefore is not depicted on the above table.

The New Mexico Environmental Improvement Agency (E.I.A.) maintains a staff of approximately three persons who are Vector Control Specialists. These personnel are responsible for assistance in the training of pesticide applicators.

The Albuquerque Department of Health has a small workforce involved in pesticides related activities. However, this workforce is not detailed here as the responsibilities are quite diverse and include activities in other environmental areas. Most of t pesticides related activity on the part of the Albuquerque Department of Health is specified for rodent control.

The U.S. Environmental Protection Agency (EPA) maintains a permanent field office staffed by one Safety Officer whose duties are defined as almost entirely related to the area of pesticides.

The New Mexico Cooperative Extension Service is responsible for the training of commercial and private applicators. This staff has been estimated to total 35 persons including approximately 32 County Agents.

The table below illustrates the present workforce in the applicator field. Commercial applicators include all persons engaged in pesticides business on a commercial basis, and are licensed under the following categories: agricultural weeds; agricultural pests; structural pests; vector control; ornamental, shade tree and turf pests; industrial and right of way vegetation control; aquatic pests; animal pest control; fumigation; and seed treatment. Private applicators are for the most part, farmers and ranchers.

TABLE VII

NEW MEXICO PESTICIDE PERSONNEL

Current (1976) Staffing Level

Position			1976	%/annum turnover (average)
Commercial Applicators:			1102	32%
Agricultural Pest-Plant:		200		
Insects	100			
Weeds	100			
Agricultural Pest-Animal		25		
Forest Pest Control		50		
Ornamental & Turf:		150		
Insect	150			

TABLE VII

(continued)

Position			1976	%/annum turnover (average)
Seed Treatment		15		
Aquatic Pest Control		15		
Right-of-way		75		
Industrial, Structural & Institutional:		400		50%
Structural	150			
Vertebrate pests	150			
Fumigation	100			
Public Health		125		**
Regulatory Pest		15		**
Demonstration & Research		32		5%
Private Applicators*			10,000	N/A
TOTAL			11,102	N/A

* Potentially certifiable; number may be as low as 6,000.
** unavailable

Presently in New Mexico there are 45 pest control companies which account for less than 55 of the above personnel. Most of these companies are small one-person operations. The turnover rate within this category of commercial applicator is estimated to be rather low, approximately 5%. Usually when an owner/applicator leaves one firm, it is to transfer into a different company. These applicators do not leave the pesticide field, as a general rule.

The turnover rate, however, for the remainder of the commercial applicators is estimated to be approximately 50%. This figure is especially characteristic of the industrial, structural and institutional applicators.

C. Workforce Projections

Little change in staff is forecast for pesticides personnel across the state. On the federal level no increase or decrease in personnel is anticipated. At the state level a one percent to two percent per annum growth may occur. At the local level a three percent per annum growth is anticipated. The private applicator numbers will exhibit substantially no change once the farmers and ranchers are certified.

The following table illustrates the projected workforce to 1982 for commercial applicators in New Mexico.

TABLE VIII

NEW MEXICO PESTICIDES PERSONNEL

Commercial Applicators
Workforce Projections to 1982 (est.)

Position	1976	1977	1978	1979	1980	1981	%/annum turnover (average)	%/annum growth (average)
Commercial: Agricultural Pest Agricultural Pest Forest Pest Ornamental & Turf Seed Aquatic Right-of-way	530	540	550	561	572	583	32%	2%
Institutional, Structural & Industrial:	400	412	424	436	449	462	50%	3%
Public Health & Regulatory	140	144	148	152	156	160	*	1%
Demonstration & Research	32	32	33	33	34	34	5%	1%
TOTAL	1102	1128	1155	1182	1211	1239	N/A	2%

* unavailable

The previous table illustrates a very small margin of growth, an average two percent per annum. The number of new people entering the field each year is limited, and state personnel feel this situation will not change over the next five years.

D. Training and Certification

In response to a broadening of responsibilities as mandated by the amendments to the Federal Insecticide, Fungicide and Rodenticide Act of 1947 (FIFRA), the Division of Pesticide Management was created. The federal Act (FIFRA) as amended requires the EPA to classify all pesticides as general use or restricted use. The public may apply all general use pesticides utilizing the instructions on the label. Restricted use pesticides may be applied only by a certified applicator. All states desiring to utilize restricted use pesticides must develop a training and certification plan.

Under the New Mexico Pesticide Control Act of 1973, several categories are designated in order to differentiate applicators. The following categories are described:

- commercial applicators;
- operators (employee of commercial applicator);
- pest management consultants (offer technical advice concerning use; do not apply pesticides themselves);
- public pest management consultants (commercial applicator; under FIFRA);
- public operator (employee under supervision of public pest management consultant); and,
- private applicators (farmers and ranchers).

All commercial pesticide applicators and public pest management consultants are required to exhibit competency in a written examination on both general and specific standards under the Plan For Certification of Pesticide Applicators, State of New Mexico, 1976.

Training programs conducted during the last year are detailed in the following table.

TABLE IX

STATE OF NEW MEXICO

Pesticides Training Programs - 1976

Sponsor	Date	Length	Program	Numbers Trained	Numbers Certified
Department of Agriculture	4-76	1 week	Demonstration & Research Workshop for County Agents	32 (Agent) 15 (other)	45
Department of Agriculture & U.S. Forest Service	11-76	1 week	Forest Pest Control	50	45
Department of Agriculture & U.S.D.A.	11-76	1 week	Regulatory Pest Control	3	3

Including the numbers of certified personnel in the previous table, the current total number of certified applicators is described as follows:

TABLE X

NEW MEXICO PESTICIDES PERSONNEL

Current Certification Status
(1976)

Category	Number Potentially Certifiable	Number Currently Certified	Percent Currently Certified
Commercial Applicators	1,102	175	16%
Private Applicators	10,000	4,300	13%
TOTAL	11,102	4,475	N/A

The Division of Pesticide Management coordinates training programs in conjunction with the New Mexico Cooperative Extension Service. The state participated in an EPA grant for development of a certification program for structural pest control operators. This program was developed by the California State Polytechnic University.

Private applicators (farmers and ranchers) will be offered three methods in order to achieve certification status: (1) County Agent Workshops of two to three hours; no exam. (2) Period of self-study; written exam at County Agent's office; graded by Division Personnel. (3) Auto-tutorial system offered at County Agent's office; written exam; graded by Division personnel. For those private applicators who cannot read, the Department will tutor individuals and review restricted-use label. The private applicator will receive a restricted certification for each product which may be purchased and applied.

Both commercial and private applicators will be recertified every five years. Under consideration is a plan to require no formal training

so long as the commercial applicator can demonstrate attendance at six hours of training and the private applicator three hours of training, during the preceding five years.

E. Career Potential

Overall the career potential in pesticides related fields will be limited in the state. Turnover and normal growth patterns (re: Workforce Projections) will offer some positions for chemists, agricultural engineers, entomologists, plant/insect pathologists, and operations supervisors in the public sector. Increasing legislative demands will require a higher level of expertise and certification where operators and applicators are concerned, but these demands are expected to have little impact on growth levels. Higher turnover rates among applicators will present job opportunities, but these jobs are generally dead-end career options. The situation in New Mexico resolves itself into one where there will likely be more career potential for trainers or instructors of vocational/technical programs than for persons employed in pesticide related occupations. Integrated Pest Management, if accepted as a viable alternative form of pest control, may provide some positions for persons with backgrounds in the natural and physical sciences.

F. Conclusion

The pesticides related workforce in New Mexico is described by Department of Agriculture personnel as stable at present. Forecasts for the period to 1982 are quite conservative and few areas of workforce increase are envisioned.

To date the Extension Service has not been able to demonstrate to the farmer the benefits which might be derived by means of an Integrated Pest Management program (IPM). These (IPM) programs will be quite limited within the state over the next few years.

A problem which is growing in New Mexico as in other western states is the increase of the coyote population. The New Mexico Department of Agriculture administers the Predatory Wild Animal and Rodent Pest Control Law. Programs developed relative to coyotes and other predators are coordinated with the U.S. Fish & Wildlife Service. The Division of Pesticide Management has completed training of applicators for special certification for use of sodium cyanide. These applicators will have one more tool for coyote population control in New Mexico. As the predator problem increases, so too will the number of predator control job opportunities. The increases are estimated to be within three to five percent per annum. These are unique and specialized occupations and ordinarily require persons with knowledge of the land, the specific predators, and "learned in the field" skills, as well as a comprehensive understanding of predacides.

IV. POTABLE WATER

A. Introduction

The State of New Mexico, along with several neighboring western states, is described as "water poor." The state, in other words, does not have an abundant supply of water. Therefore, planning becomes the critical element associated with the state's water programs. In a few areas of the state, water regulation is necessary to ensure equitable allocation to the people.

Within the state, the primary responsibility for the regulation and environmental management of drinking water quality has been allocated to the Environmental Improvement Agency (E.I.A.), the Water Supply Program.

On the local level in Albuquerque - Bernallilo county, local food inspectors are responsible for inspecting drinking water supplies. However, these inspectors have many other areas of concern and assigned activities. Therefore, the local Albuquerque workforce is not numerically included in this section.

B. Workforce Profile

The major areas of responsibility allocated to the E.I.A. Water Supply Program are:

- the availability of suitable sources, the treatment and the distribution of drinking water;
- the protection of water sources;
- the establishment or the renovation of a system; and,

° the storage of water.

The activities which support these areas of responsibility include: surveillance, monitoring, operation and maintenance, and assessment and evaluation. To facilitate the efficient management of these activities, the E.I.A. Water Supply Program has been divided into two components. These components are:

° Water Supply Regulation; and

° Water Supply Construction.

The Water Supply Regulation Section has been assigned specific activities. Included in these activities are the following:

° chemical and bacteriological monitoring of drinking water;

° toxic chemical surveillance of water sheds;

° facilities and systems evaluations;

° operational review of water treatment; and,

° technical assistance to water utilities.

The Water Supply Construction Section conducts specific activities related to assisting communities with their water system facilities. In an effort to supply sufficient drinking water to the people, this Section assists in funding for construction, enlargement, updating or improving the community facilities. These activities are conducted under the New Mexico Sanitary Projects Act of 1947 and the New Mexico Water Supply Construction Act of 1973.

As of November 1976 the E.I.A. had identified and classified 49 water utilities which serve a population in excess of 2,500. These may be seen on the following table.

TABLE XI

STATE OF NEW MEXICO

Classification & Treatment Processes - Water Utilities
Serving Population In Excess of 2,500
(November 1976)

TREATMENT PROCESSES	CLASSIFICATION I	II	III	IV	TOTAL
Sedimentation & Cl_2	0	1	0	0	1
Cl_2	3	16	7	5	31
Cl_2 & Fl_2	0	3	0	1	4
De Fl_2 & Cl_2	0	0	1	0	1
Filtration, Cl_2	0	1	1	0	2
Filtration, Cl_2 & Fl_2	0	0	1	0	1
Filtration, Sedimentation, Cl_2	0	0	2	0	2
Filtration, Sedimentation, Cl_2 & Fl_2	0	0	0	1	1
Filtration, Sedimentation, Coagulation, Cl_2	0	0	1	1	2
Filtration, Sedimentation, Coagulation, Cl_2 & Fl_2	0	0	0	0	0
Filtration, Sedimentation, Coagulation, Chemical Feed, Cl_2	0	0	0	1	1
Filtration, Sedimentation, Chemical Feed, Cl_2 & Fl_2	0	1	1	1	3
TOTAL	3	22	14	10	49

The previous table describes the 49 water utilities serving populations in excess of 2,500. These utilities are detailed relative to treatment process and utility classification.

The workforce profile of the Water Supply Program of the E.I.A. may be seen in Table XII. The two components of the program are not differentiated in the table below.

TABLE XII

ENVIRONMENTAL IMPROVEMENT AGENCY

Water Supply Program
Current (1976) Staffing Level

Position	1976	%/annum turnover (average)
Environmental Program Manager	1	*
Environmental Engineer	5	8%
Environmental Scientist	1	8%
Planner	1	8%
Plant Operations Specialist	1	8%
Environmentalist	7	8%
Environmental Technician	1	8%
Secretarial	2	N/A
TOTAL	19	N/A

* unavailable

The Environmental Improvement Agency is also responsible for the training and certification of water supply operators under the Mandatory Utility Operators Certification Act, and the Water Quality Control Commission Regulations on utility operator certification. An overview of these activities may be found in Section D entitled, "Training and Certification."

TABLE XIII

NEW MEXICO WATER TREATMENT PLANT PERSONNEL

Certified Operators
Current (1976) Staffing Level

Classification	1976	%/annum turnover (average)
I (lowest)	69	33%
II	154	33%
III	119	33%
IV (highest)	89	33%
TOTAL	431	33%

There are some operators included above who also hold wastewater certificates. The turnover rate is closer to 35% in the southern part of the state due to the close proximity of mining activities. Work in the mines can be inviting when water operator salaries are compared to those of the miners.

C. Workforce Projections

The following table depicts the projected workforce for the Water Supply Program to 1982. These estimates represent the best judgements of professionals in the field. Because of the present state freeze on hiring of new personnel, these estimates are speculative at best. Intra-departmental transfers may be utilized to effect needed staff increases should the ban on new hires continue.

TABLE XIV

ENVIRONMENTAL IMPROVEMENT AGENCY

Water Supply Program
Workforce Projections to 1982 (est.)

Position	1976	1977	1978	1979	1980	1981	%/annum turnover (average)	%/annum average (average)
Environmental Program Manager	1	1	1	2	2	2	*	20%
Environmental Engineer	5	5	6	6	7	7	8%	7%
Environmental Scientist	1	1	1	2	2	2	8%	20%
Planner	1	1	1	1	1	2	8%	20%
Plant Operations Specialist	1	1	1	1	1	1	8%	0%
Environmentalist	7	7	7	7	7	7	8%	0%
Environmental Technician	1	2	2	2	2	2	8%	20%
Secretarial	2	2	3	3	3	3	N/A	10%
TOTAL	19	20	22	24	25	26	N/A	6%

Table XV on the following page details the projected workforce to 1982 for certified water personnel in the state. The average percent per annum increase illustrated in the table is three percent. However, the E.I.A. suggests that perhaps a slightly higher rate of growth will occur.

The 1976 figures are those which include some operators holding water and wastewater certificates. These projections are based on the best judgements of professionals interviewed from the area of potable water on the state staff.

TABLE XV

NEW MEXICO WATER TREATMENT PLANT PERSONNEL

(Certified Operators)
Workforce Projections to 1982 (est.)

Class	1976	1977	1978	1979	1980	1981	%/annum turnover (average)	%/annum growth (average)
1	69	71	73	75	77	79	33%	3%
2	154	158	162	167	172	177	33%	3%
3	119	122	125	129	133	137	33%	3%
4	89	92	95	98	101	104	33%	3%
TOTAL	431	443	455	469	483	497	33%	3%

D. Training and Certification

To be in compliance with the Mandatory Utility Operators Certication Act each water utility serving 2,500 population or more must have an operator in "responsible charge." This means the operator must be certified to the level of the utility or better.

The following table details the training during the last year. Wastewater operators were also trained at these programs but attempts have been made to differentiate numbers of each category.

TABLE XVI

STATE OF NEW MEXICO

Water Training Programs - 1976

Sponsor	Length	Program	(estimated) Average No. Trained/Year
New Mexico State University	2 years	Operators Vocational School (A.A. degree)	5
Navajo Tribal Utility Authority	1 week (3 per year)	Lab Techniques & Procedures Course	20 - 30

TABLE XVI

(continued)

Sponsor	Length	Program	(estimated) Average No. Trained/Year
New Mexico State University	5 days	Technology Transfer & Training	50
New Mexico Water Supply & Pollution Control Association	3 days (4 per year)	Area training for certification	50
New Mexico Water Supply & Pollution Control Association	5 days	Area training for certification	12

As seen in the previous table, training for operators in New Mexico is varied and estensive. The area training for certification is held in Gallup, Artesia, Farmington, and Las Cruces. There are ordinarily six of these area training sessions; howver, during this last year only five were held.

E. Career Potential

Career level positions will be available for operators in all classification categories, although patterns will trend towards the higher levels of certification as a consequence of increasingly complex plant operation. At the larger more sophisticated plants there will be limited opportunity for engineers with management skills and a few laboratory personnel, e.g., chemists, micro/microbiologists as well as support technicians.

At the state level a few positions for engineers and scientists are likely to develop to regulate and maintain operations mandated by the Safe Drinking Water Act. If inspection, sampling and monitoring activities are intensified, a small number of technicians trained to carry out these functions will find jobs. However, before the state can accurately forecast its needs, it must accept the ramifications of the Act and the federal government will have to support the state effort.

F. Conclusion

Water in New Mexico, as in other western states, is a premium commodity. To protect the individual citizen as well as the community and to provide protection against inadequate and improperly designed water supply systems is the overall goal of the Water Supply Program of the E.I.A.

Most communities in New Mexico, even the small rural villages, continue to increase their population. Unfortunately, their water utilities remain over-extended and unimproved. The state is currently addressing these problems. While monitoring and inspection are critical to the continued adequate functioning of a water supply, personnel with drinking water expertise are in short supply. The state will be increasing activities related to testing and monitoring or radiological contaminants, pesticides and heavy metals.

New Mexico has indicated to the U.S. EPA its intention to assume primary enforcement authority. Increased activities associated with these new areas of responsibility foretell a challenging future in the area of drinking water for New Mexico.

V. RADIATION

A. Introduction

Under the Radiation Protection Act, Chapter 284, Laws of 1971, 12-9-1 through 12-9-11, NMSA 1953 compilation, the Environmental Improvement Agency (E.I.A.) maintains a staff of radiation specialists, as part of the Occupational Health and Radiation Division. There is frequent interaction between the Radiation Section and other programs of the E.I.A. because radiation and radioactive materials may be found in samples from environmental disciplines such as water, air and solid waste.

A Radiation Technical Advisory Council has been established, and consists of seven members with specialization in radiation appointed by the Governor. The members must all be trained in the sciences. The major responsibility of this Board is to advise the Department, the Agency and the Board on technical matters involving radiation.

The Albuquerque Department of Health maintains a small staff with expertise in the area of radiation. The Albuquerque program activities are mainly associated with medical and dental X-ray. This staff is represented by one full-time equivalent professional.

B. Workforce Profile

The Radiation Section is charged with several responsibilities. Not only do personnel offer expertise to other environmental programs within the E.I.A., but external to the agency the medical profession

and industrial sector are placing increasing demands upon the small E.I.A. staff for technical assistance.

The following table details the workforce profile for the E.I.A. Radiation Program.

TABLE XVII

ENVIRONMENTAL IMPROVEMENT AGENCY

Occupational Health & Radiation Division
Radiation Section
Current (1976) Staffing Level

Position	1976	%/annum turnover (average)
Division Chief	1	*
Environmental Program Manager	1	40%
Environmental Scientist	4	40%
Secretarial	2	N/A
TOTAL	8	N/A

* unavailable

The above includes the Division Chief who allocates approximately 50% of his time to the radiation program. The turnover rate is high (40%) due to the proximity of Los Alamos Scientific Laboratory and their need for experienced people trained in radiation protection.

Within the State of New Mexico the medical, industrial and educational uses of radiation are increasing. Within the last year there has been a 15% increase in X-ray machine registrants and a 10% increase in radioactive materials licenses. New Mexico experts anticipate that the medical licenses will continue to increase at approximately 10% per year. This increase is due specifically to the Meson Physics Facility at Los Alamos and to the University Cancer Research

Center. The number of X-ray machines has gone from 1,053 in 1971 to approximately 1,800 in 1976.

The following table approximates the workforce in the private sector.

TABLE XVIII

STATE OF NEW MEXICO

Radiation Personnel*
Current (1976) Staffing Level
(estimated)

Position	1976
Research Reactor Operator	8
Accelerator Operator	25
Radioisotope Production Operator	6
Hot-Cell Technician	12
Plutonium Handling Technician	7
Radiation Control Technician	79
Radiochemistry Technician	30
Non-Destructive Testing Technician	12
Radiographer	20
Nuclear Geological Technician	17
Instrumentation/Control Technician	39
Well-Logging Technician	23
X-Ray Calibration Technician	59
Radiologic Technologist	115
Nuclear Medical Technologist	25
Radiation Therapist	3
Radiopharmacist	2
Inhalation Toxicology Technician	30
TOTAL	512

SOURCE: An Analysis of Nuclear Related Technician Manpower in Western States. U.S. Energy Research Development Administration publication #78.

* Turnover rates unavailable

C. Workforce Projections

The future of the radiation field promises to be most challenging as the energy resources of the state, especially uranium, are developed. The following table details the projected workforce to 1982 for the Radiation Section. Because the state has instituted a freeze on new hires for the E.I.A., intra-agency transfers will be required to facilitate the staff increases depicted below.

TABLE XIX

ENVIRONMENTAL IMPROVEMENT AGENCY

Occupational Health & Radiation Division
Radiation Section
Workforce Projections to 1982 (est.)

Position	1976	1977	1978	1979	1980	1981	%/annum turnover (average)	%/annum growth (average)
Division Chief	1	1	1	1	1	1	*	0%
Environmental Program Manager	1	1	1	1	1	1	30%	0%
Environmental Scientist	4	4	5	5	6	6	30%	10%
Secretarial	2	2	2	3	3	3	N/A	10%
TOTAL	8	8	9	10	11	11	N/A	7%

* unavailable

The above table is based on the best professional judgements of staff members of the Environmental Improvement Agency. The turnover rate is projected to be somewhat less in the future (30% compared to 40% currently), if state salary scales are increased.

D. Training and Certification

On the job training (OJT) is offered for new entrants in the state system. This usually consists of an orientation period followed by an apprenticeship phase during which the new entrant is teamed with an experienced staff member for about one year.

The potential for upward mobility within this section is rather limited. However, approximately one person per year is job advanced as a result of on-line training. The following table details the facilities and the course offerings available in radiation control in New Mexico.

TABLE XX

STATE OF NEW MEXICO

Radiation Programs

Institution/Facility	Course Offering
Presbyterian Hospital, Albuquerque	Radiologic Technology
University of Albuquerque, Albuquerque	Radiologic Technology
Memorial General Hospital, Las Cruces	Radiologic Technology
University of New Mexico, Albuquerque	Nuclear Medical Technology

SOURCE: An Analysis of Nuclear Related Technician Manpower In Western States. U.S. Energy Research and Development Administration, publication #78.

Several short courses are offered and one ten-week course is given yearly through an agreement with the Nuclear Regulatory

Commission (NRC). Training is also accomplished in association with Oak Ridge Associated Universities and at various other universities through NRC agreement.

New personnel are not well prepared for entry level positions, according to the state radiation professionals. This is due to a low entry level state salary. The entering personnel lack experience, and the state is not prepared to meet the comparatively high salaries which are offered at the private institutions nearby.

E. Career Potential

Over the next few years, due to the energy crisis and a change to nuclear technology, there should be job opportunities within this field. New jobs will be created as a consequence of advancing nuclear technology and more stringent federal and state legislation. These career opportunities will be represented by: scientist, engineer and technician, specifically with nuclear and radiation expertise.

F. Conclusion

The use of radiation and radioactive materials has increased in New Mexico. In 1974, New Mexico became an "agreement" state. At that time there were approximately 120 licenses which were transferred by the Atomic Energy Commission (AEC) now the Nuclear Regulatory Commission (NRC). These licenses were consolidated into approximately 90. Presently there are 115 licenses within the state; approximately 85% are medical and four are uranium mills. As previously stated, the number

of medical licenses is projected to sustain a ten percent increase per year. Industrial licenses will show a small increase annually, and the majority of these will be uranium mills.

The radiation related problems within the state are varied and sometimes unique. The presence of radioactive materials within the environment has presented the state with an interesting example. Recently, elevated levels of radioactive isotopes in building materials have come to the attention of the Environmental Improvement Agency.

New Mexico has radiation problems related to liquid and solid waste being generated from the Grants uranium mine and mill district. A special study is presently on-going within the Grants Mineral Belt. Through this study, the state expects to define mining and milling problems and to make recommendations, applicable world-wide, which would address the environmental problems resulting from uranium related activities.

VI. SOLID WASTE

A. Introduction

The responsibility for the statewide solid waste management program has been allocated to the Environmental Improvement Agency (E.I.A.). The major goal of this program is to ensure proper collection, storage, transportation and disposal of all solid waste materials within the state.

One of the problems associated with solid waste in New Mexico is the degradation of the countryside with scattered roadway trash. Open burning dumps is another major problem.

The solid waste management field maintains the highest accident rate of any industry in the United States. The public and the solid waste worker may be exposed to hazardous and/or toxic fumes. Flying debris, as a result of exploding pressurized containers, and rodent and insect related disease are dangers which prevail when solid wastes are not efficiently and effectively managed. In order to address these and other areas of concern in New Mexico, the Solid Waste Management Program was established.

The state staff has identified 1,000 solid waste disposal sites in the state. Of these, approximately 350 are described as legal. This means that these sites are registered with the state. The remaining 650 sites are not described within this context. Among other factors, these sites do not have a person in responsible charge.

Presently, there are no transfer stations in New Mexico. The prevailing reason is cost, ordinarily too high for a small population to bear. Distribution of the state population may be seen below.

TABLE XXI

POPULATION OF NEW MEXICO COMMUNITIES

under 500	500 to 1,000	1,000 to 5,000	5,000 to 10,000	10,000 to 20,000	over 20,000
25	18	24	10	5	9

SOURCE: U.S. Bureau of the Census, 1960 and 1970, Census of Population, New Mexico Municipal League, Directory of Municipal Officials, 1972.

The nine communities shown on the above table presently having a population of over 20,000 include Las Cruces, Roswell and Santa Fe which have populations of approximately 40,000. Albuquerque is the city (and the largest within the state) which has a population of approximately 290,000. It has been estimated that within five years Albuquerque will have filled present sites. At that time, if lack of land becomes a problem, a transfer station may be established.

B. Workforce Profile

There is increasing interest and activity in the solid waste management program across the state by the residents and the tourists in New Mexico. Spearheading this drive is the Solid Waste Management Program of the E.I.A.

There are personnel within the Albuquerque-Bernadillo County Environmental Health Department who contribute to the local workforce

in this environmental pollution and control area. However, the effort is on the part of the local sanitarians who are charged with a myriad of reponsibilities,only one of which is solid waste.

The tables below detail the New Mexico E.I.A. workforce. The Albuquerque staff has been omitted from these tables as numerical values specifically allocated to this environmental activity are difficult to assign.

TABLE XXII

ENVIRONMENTAL IMPROVEMENT AGENCY

Solid Waste Management Program
Current (1976) Staffing Level

Position	1976	%/annum turnover (average)
Environmental Program Manager	1	0%
Environmental Scientist	2	150%
Training Specialist	1	0%
Secretarial	1	N/A
TOTAL	5	N/A

Table XXII illustrates the E.I.S. solid waste personnel as of 1976. In 1975 there were eight Environmental Scientists assigned to the Program. By 1976 this number had been reduced by three.

The turnover rate is normally quite low. The Environmental Scientist category listed on the above table has illustrated a recent exception to this rate. Three persons have left these "term" positions which are temporary assignments based on specific federal funding. Job security is therefore minimal. While the salary is the same as other environmental salaries within the E.I.A., it is relatively low.

The table below estimates the professional and non-professional workforce across the state of New Mexico.

TABLE XXIII

STATE OF NEW MEXICO

Solid Waste Personnel
Current (1976) Staffing Level
(estimated)

Position	1976	%/annum turnover (average)
Non-professional: Collectors Equipment Operators Drivers Supervisors	600	30%
Professional/Management	76	15%
TOTAL	676	N/A

For those non-professional personnel on the above table, turnover is usually high and salary is low. Workers join a disposal crew and leave at the first offer of a job outside the field. The work is described as less than glamorous and overall educational levels are lower than other occupations. The salaries are a bit higher in larger towns and cities; therefore, the turnover rate decreases as the size and socio-economic level of the town or city increases.

The private sector, ordinarily a substantial component of a solid waste profile, is not a significant factor in New Mexico, and includes approximately five percent of the total workforce. At present, there are several communities in New Mexico which utilize the efforts of private contractors. These private contractors pick up and transport

refuse as well as operate the site. Currently Hobbs, Carlsbad, Texaco, several air bases, and the City of Albuquerque utilize these services.

C. Workforce Projections

The staff of the Solid Waste Management Program is projected to experience little or no increase over the next three years, although the areas of responsibility are enlarging. The main reason for this anticipated lack of growth is reflected in the fact that the Solid Waste Management Program is not an area of high priority within the Agency.

The recent passage of the Toxic Substances Act and the Resource Conservation Act will exert pressures that should require staff increases for this program. E.I.A. personnel anticipate the possibility of an acceleration of federal construction grants activity. Inspection and evaluation of each proposed sanitary landfill is not only a necessity, but is time consuming and requires competently trained personnel.

As the public exhibits increased awareness and interest in solutions to solid waste related problems, the Environmental Improvement Agency, Solid Waste Management Program must emphasize and demonstrate appropriate planning. These factors, then, are all contributors to the necessity for an increased workforce. The following table details the estimated workforce to the year 1982 for the E.I.A. Program. Realistically, this table does not reflect staffing needs but rather anticipated staffing acquisitions.

TABLE XXIV

ENVIRONMENTAL IMPROVEMENT AGENCY

Solid Waste Management Program
Workforce Projections to 1982 (est.)

Position	1976	1977	1978	1979	1980	1981	%/annum turnover (average)	%/annum growth (average)
Environmental Program Manager	1	1	1	1	1	1	0%	0%
Environmental Scientist	2	2	2	2	3	3	*	10%
Environmental Sanitarian	0	0	0	0	1	1	*	20%
Environmental Engineer	0	0	0	0	1	1	*	20%
Training Specialist	1	1	1	1	1	1	0%	0%
Secretarial	1	1	1	1	1	1	N/A	0%
TOTAL	5	5	5	5	8	8	N/A	12%

* unavailable

There are indications that in general the E.I.A. turnover rate will continue to be quite low. Expanding areas of expertise within the Program will include planning and technical assistance to local municipalities. Enforcement related activities and statewide program evaluation will add further to the E.I.A. solid waste management program responsibilities.

The following table estimates the projected workforce to 1982 across the state. Figures include personnel other than the state workforce.

TABLE XXV

STATE OF NEW MEXICO

Solid Waste Personnel
Workforce Projections to 1982 (est.)

Position	1976	1977	1978	1979	1980	1981	%/annum turnover (average)	%/annum growth (average)
Non-professional	600	570	542	515	489	464	25%	-5%
Professional	76	77	78	79	80	81	5%	1%
TOTAL	676	647	620	594	569	545	N/A	-4%

The professional workforce depicted above will become increasingly skilled in the new technology of the field. Minimal growth will occur, however, (average one and one-half percent per annum) as accelerating costs of equipment preclude staff increases.

Decreases in non-professional state-wide positions in the solid waste field will approximate five percent per year. This will result largely from the increasing size and efficiency of equipment. Municipalities are predominantly collector oriented and these systems are described as capital-intensive. With the increase of the utilization of larger and more expensive equipment, one man with one truck will be able to accomplish what six men and two trucks previously accomplished in the same time frame.

Increased levels of job competency and upgraded skills as well as improved safety techniques will contribute to maintaining the workforce effort while not increasing the number of personnel.

D. Training and Certification

Training in the field of solid waste in New Mexico has been severely curtailed by the E.I.A. This is due to a lack of personnel for this function.

At this time, there is no certification of personnel in the state. There is little emphasis placed on future planning for a certification program. The E.I.A. personnel have expressed the view, however, that certification would strengthen safety procedures of these jobs. At the same time, certification would most likely contribute to increases in salary scales.

The following table details the training efforts within the state during 1976. It is noted, by examination of this table, that during the first five months of 1976, on the average, fifteen percent of the month was allocated to training. During the last seven months of the same year, this effort declined to a negligible percentage of staff time.

TABLE XXVI

STATE OF NEW MEXICO

Solid Waste Management
Training Programs - 1976

Sponsor	Date	Length	Program	Average Number Trained
E.I.A.	1/76	3 days	School included all aspects of solid waste	20
E.I.A.	2/76	3 days	same as above	20
E.I.A.	3/76	3 days	same as above	20

TABLE XXVI

(continued)

Sponsor	Date	Length	Program	Average Number Trained
E.I.A.	4/76	3 days	School included all aspects of solid waste	20
E.I.A.	5/76	3 days	same as above	20
E.I.A.	/76	2-4 hrs.	Safety procedures in solid waste	15
E.I.A.	/76	2-4 hrs.	same as above	15
E.I.A.	/76	2-4 hrs.	same as above	15

The attendees at the three day schools ordinarily included collectors, drivers, operators, city managers, city superintendents and elected officials. The short two to four hour seminars were attended by collectors almost exclusively.

The solid waste training in New Mexico is presently almost non-existent. The future training efforts will be accomplished only if staff is made available for that specific purpose. It would appear, that the solid waste training program decline has been the result of budgetary constraints.

E. Career Potential

As indicated by the preceding section entitled "Workforce Projections" the occupational future in the area of solid waste, professional as well as non-professional, does not appear optimistic in New Mexico.

However, meeting the guidelines established by the Resource Conservation and Recovery Act of 1976 will have a dramatic impact on solid waste staffing configurations in both the public and private sectors. Engineer, planners, statisticians, scientists and highly trained technical level people will be needed. Still, the degree to which these positions will emerge will depend on the level of state fiscal support and the subsequent level of complementary support by the federal government.

F. Conclusion

With the recent enactment of the Resource Conservation and Recovery Act, increased attention is being focused nationally upon solid waste activities. New Mexico as yet has not established a resource recovery site, and developmental plans have not been proposed for the near future. Markets have not been developed within the state, and transportation costs are high. These are the major factors which deter the establishment of a resource recovery site, at present. E.I.A. personnel have estimated time lines relative to the anticipated establishment of sites across the state. The following table details these estimates.

TABLE XXVII

STATE OF NEW MEXICO

Establishment of Resource Recovery Sites
(Estimated Time Lines)

Community	Quantity Per Day To establish need for site (estimated - projected)	Year To establish tonnage (estimated - projected)
Albuquerque	800 - 1,000 tons	1982
Santa Fe	130 - 150 tons	1987
Las Cruces	115 - 125 tons	1988
Roswell	190 - 210 tons	1990

The above table depicts the possible establishment of resource recovery sites for the four largest cities within the state. For example, it is estimated that Roswell would have to generate approximately 200 tons of solid waste per day before seriously considering resource recovery as a viable alternative. It will be ten to fifteen years, according to state personnel, before this tonnage (which is twice the current tonnage per day) is generated.

New Mexico is the home of several federal technology and research centers which generate hazardous wastes, predominately nuclear. The State of New Mexico currently has an agreement with these federal installations regarding disposal of hazardous and toxic wastes. The following are centers which have hazardous waste facilities on-site: Los Alamos, Sandia Laboratories and the United States Air Force Weapons Laboratory at Kirtland. For a more complete description of these installations, the reader is referred to Section VIII, entitled "Energy."

The U.S. Energy Research and Development Administration (ERDA) currently is assessing three locations in the United States for a proposed Waste Isolation Pilot Project. Each of these sites would be of a different geological composition. Carlsbad, New Mexico has been chosen as a site for the ERDA Waste Isolation Pilot Project. Recent events have contributed to the air of speculation which now surrounds this project. There is substantial evidence that high quality and large quantities of potash are located in this region. This is a resource which the United States is in need of and which is no longer available in large reserves. In spite of this competing set of factors, the money for this project has been requested in the Presidential Budget to Congress, 1978. The construction phase is slated to commence April 1979 while the completion date of this $250 million project is 1983. Events related to the environmental concerns of hazardous wastes and toxic substances, in the future should draw keen interest and attention to New Mexico.

VII. WASTE WATER

A. Introduction

The primary responsibility for waste water pollution control and abatement in the State of New Mexico is with the Environmental Improvement Agency (E.I.A.), Water Quality Division, Water Pollution Control Program. The statutory authority is found in Chapter 340, Laws of 1973, the Water Quality Act (75-39-1 to 75-39-12).

The Water Pollution Control Program is responsible for the surface and ground waters of the State of New Mexico. The administration of the municipal waste water treatment facilities construction grants program is a major activity of this E.I.A. responsibility. Other major activities and areas of responsibility include the regulation of treatment and disposal of domestic, municipal, agricultural and industrial waste water. The training and certification of waste water treatment plant operators is included in the list of major responsibilities allocated to this program.

The Water Pollution Control Program is divided into sections which consist of the following five components:

- Water Pollution Control Construction;
- Water Pollution Control Surveillance and Standards;
- Water Pollution Control Permits and Regulations;
- Water Quality Planning;
- Plant Operator Training and Certification.

Diversification of activities within the state's 121,511 square miles contribute to waste water related problems unique to an area or section of New Mexico. The problems and solutions relative to waste water and its treatment are compounded by mining and milling activities. To meet these challenges the E.I.A. and the Water Quality Control Commission, established the Water Pollution Control Program.

B. Workforce Profile

To ensure the health of the people of New Mexico and to protect water recreation and economic uses is the main goal of the E.I.A. Water Pollution Control Program. The responsibilities of the five sections mentioned above are extensive and varied.

The Water Pollution Control Construction Section provides: technical assistance; review and comment assistance; review and comment on all public wastewater construction plans as well as federal and state grant program facilities; administration of state grant funds; training and upgrading of operators; quarterly sampling and analysis from each wastewater facility.

The Water Pollution Control Surveillance and Standards Section is responsible for: water quality surveys of reservoirs, streams and ground waters; identification (and quantification) of water quality problems state-wide; development of standards and problem solutions. The standards are the basis of the state program and the issuance of discharge permits.

The Water Pollution Control Permits and Regulations Section has the major responsibility for developing regulations and guidelines

relative to the administration of the National Pollutant Discharge Elimination System (NPDES). Until the state assumes responsibility for the program, this section is responsible to the U.S. Environmental Protection Agency for state assistance in this area.

The Water Quality Planning Section prepares statewide water quality management plans, conducts public hearings, and is developing an oil and hazardous substance contingency plan in response to emergency situations.

The Training and Certification Section is responsible for the training and certification of waste water personnel throughout the state. The activities of this Section are more fully explored in part D entitled "Training and Certification."

The following table details the current E.I.A. waste water personnel under the Water Quality Division, Water Pollution Control Program.

TABLE XXVIII

ENVIRONMENTAL IMPROVEMENT AGENCY

Water Pollution Control Program
Current (1976) Staffing Level

Position	1976	%/annum turnover (average)
Division Chief	1	N/A
Environmental Program Manager	2	N/A
Geohydrologist	1	10%
Environmental Scientist	7	10%
Environmental Technician	1	10%
Plant Operations Specialist	1	10%
Engineer	4	*
Secretarial	4	N/A
TOTAL	21	N/A

* unavailable

Table XXVIII above details the Water Quality Division, Water Pollution Control Program without differentiating staff into the five sections previously described.

Certified operators are depicted in the table below. At present, wastewater personnel other than operators, have not been identified.

TABLE XXIX

NEW MEXICO WASTE WATER TREATMENT PLANT PERSONNEL

Certified Operators
Current (1976) Staffing Level

Classification	1976	%/annum turnover (average)
I (lowest)	58	20%
II	145	20%
III	150	15%
IV (highest)	82	15%
TOTAL	435	18%

There are personnel certified in both waste water and water. Often in a small community, one man will be responsible for water and wastewater and on occasion, parks, streets, etc.

A total of 48 waste water utilities have been identified which serve populations of 2,500 or more. These utilities are identified in Table XXX on the following page. No attempt has been made herein to identify facilities serving populations which are less than 2,500.

TABLE XXX

NEW MEXICO

Classification of Waste Water Utilities

Facilities Serving Populations of 2,500 or More

(November 1976)

TREATMENT PROCESS	CLASSIFICATION I	II	III	IV	TOTAL
Activated Sludge with Filter	0	0	1	3	4
Aeration Lagoons	0	1	0	0	1
Extended Aeration	0	2	2	0	4
Lagoons	4	0	0	0	4
Trickling Filter	1	6	12	9	28
Trickling Filter with Pond	0	3	3	1	7
TOTAL	5	12	18	13	48

C. Workforce Projections

Water in New Mexico as in other western states is a premium commodity. The state seriously adheres to legislated authority to protect the water quality for the good of the people. In that context, the following workforce requirements have been projected to 1982. The following tables detail the estimated increase in waste water personnel which would be required within the E.I.A. as well as within the operator ranks.

TABLE XXXI

ENVIRONMENTAL IMPROVEMENT AGENCY

Water Pollution Control Program
Workforce Projections to 1982 (est.)

Position	1976	1977	1978	1979	1980	1981	%/annum turnover (average)	%/annum growth (average)
Division Chief	1	1	1	1	1	1	N/A	0%
Environmental Program Manager	2	2	2	2	2	2	N/A	0%
Geohydrologist	1	1	2	2	3	3	10%	30%
Environmental Scientist	7	7	7	8	8	9	10%	7%
Environmental Technician	1	1	2	2	2	2	10%	20%
Plant Operations Specialist	1	1	1	2	2	2	10%	20%
Engineer	4	4	5	5	6	7	*	13%
Secretarial	4	5	5	6	6	6	N/A	9%
TOTAL	21	22	25	28	30	32	N/A	10%

* unavailable

The above table details an average per annum growth of 10% in the Water Pollution Control Program of the E.I.A. Subsequent to the development

of these projections, the state instituted a freeze on new hires for the E.I.A. Therefore, the previous figures will require revision should this condition continue. Intra-agency transfers will be required from one program area to another as staffing priorities are established.

The following table details the projected certified plant personnel workforce to 1982.

TABLE XXXII

NEW MEXICO WASTE WATER TREATMENT PLANT PERSONNEL

Certified Operators
Workforce Projections to 1982 (est.)

Class	1976	1977	1978	1979	1980	1981	%/annum turnover (average)	%/annum growth (average)
I	58	60	62	64	66	68	20%	3%
II	145	149	153	158	163	168	20%	3%
III	150	153	156	159	162	165	15%	2%
IV	82	84	86	88	90	92	15%	2%
TOTAL	435	446	457	469	481	493	18%	3%

The above table illustrates an average 3% per annum growth rate in waste water treatment plant operators. The turnover rate is projected to remain at approximately 18% but could be as high as 30% in the southeastern section of the state. The higher turnover rate exists in the southeastern section of New Mexico because of the occupational competition available to the operators from the mining and milling industries.

D. Training and Certification

The certification of operators and its requisite training is under the aegis of the Environmental Improvement Agency, Water Pollution Control Program, Operator Training and Certification Section.

Training in the state is represented in several forms and on several levels. The following table details the training effort relative to certification and to upgrading of on-line personnel during the past year.

TABLE XXXIII

STATE OF NEW MEXICO

Waste Water Training Programs - 1976

Sponsor	Length	Program	(estimated) Ave. No. Trained/Year
New Mexico State University	2 years	Operators Vocational School (A.A. Degree)	10
Navajo Tribal Utility Authority	1 week (3 per year)	Lab Techniques* Procedures Course (NPDES)	25-30
New Mexico State University	5 days	Technology Transfer & Training	60
New Mexico Water Supply & Pollution Control Association	120 hours (4 per year)	Water & Waste-water Operations	70
New Mexico Water Supply & Pollution Control Association	5 days (2 per year)	Water & Waste-water Operations for Certification	12
New Mexico State University	6 months	Water & Waste-water Operations	15

TABLE XXXIII

(continued)

Sponsor	Length	Program	(estimated) Ave. No. Trained/Year
Carlsbad Area Water Supply & Pollution Control Association	1 week (1 day class and 4 day OJT)	Area Training for Certification utilizing "Sacramento Course"	10
Texas A & M	1 day (10 per year)	Fill-in coverage of subjects not elsewhere offered or adequately covered	120

The Mandatory Utility Operators Certification Act states that each waste water utility serving 2,500 population or more must have an operator in "responsible charge." This means the operator must be certified to the level of the utility or better. To this end, the training and certification program in New Mexico offers a variety of options, as seen in the above table.

E. Career Potential

Career opportunities in the area of waste water in the state of New Mexico will be on the degreed level. Areas of study will represent the fields of geohydrology, engineering, and environmental technology.

On the operator level, job opportunities will be available in limited numbers. The fact that the turnover rate is high will encourage openings as operators leave the field for temporary employment (or permanent) in the mining and milling industry and elsewhere.

F. Conclusion

The single most often mentioned hindrance to the future growth and development of the State of New Mexico is water of adequate quality. New Mexico's waters are becoming increasingly degraded, both surface waters and underground waters. A major factor in this contamination is an increasingly affluent society.

New Mexico, recognizing the increasing contamination of its waters, is dedicated to strengthening the state's water pollution control programs. Waste water facilities which are inadequate and staffed by untrained personnel present a challenge which the state is endeavoring to meet.

Waters of New Mexico currently represent nearly pristine quality in the mountains and highly saline conditions in the lower areas. Across the state, however, limited quantities of stream water are able to accept wastewater dilution. This increases the need for waste water treatment.

In addition, serveral areas of the state are experiencing the "boom town" sydrome (too rapid development). Examples include: Four Corners area power generation with ensuing development; an increase in uranium mining activity; and, increased strip mining near the towns of Gallup, Cuba, and Farmington.

A cooperative effort on the part of local, state and federal agencies is currently addressing these problems. Not only the state Environmental Improvement Agency, but the Department of Game and Fish, the Department of Agriculture, Parks and Recreation, the Bureau of Mines,

the Natural Resource Conservation Commission, Oil Conservation Commission, and the State Engineer have joined forces to improve degraded waters in the state and to maintain those of high quality.

VIII. ENERGY

A. Introduction

New Mexico is considered an energy rich state. The state's plentiful supply of energy ranks New Mexico as a leading producer of oil, natural gas, uranium and coal. New Mexico ranks first in the nation in uranium production and reserves. The state is the fourth largest producer of natural gas and ranks fifth in reserves nationally. The San Juan Basin contains the fourth largest natural gas field in the world. Currently (1976) the state exports 90% of its natural gas and 66% of its electricity.

New Mexico is a forerunner in energy technological research and development. The world's first atomic device was exploded in 1945 at the White Sands Missile Range. Today this is the largest land area military reservation (5,600 square miles) in the United States. Although the company's primary research and development responsibilities will continue to be in the area of weapons, space shuttle and meteorological research will be maintained. Increased efforts relative to solar, nuclear and coal research will be future endeavors.

The Los Alamos Scientific Laboratories are located 30 miles northeast of Santa Fe and are operated by the University of California. Although the laboratories were established in 1942 for the purpose of creating the world's first nuclear weapons, today extensive research in physics, metallurgy, and magnetohydrodynamics is on-going and anticipated to increase. Energy research activities include the areas of solar, fossil, geothermal and nuclear.

The New Mexico Bureau of Mines and Mineral Resources at Socorro conducts energy related studies on the vast mineral resources of the state. In Albuquerque, Sandia Laboratories, under the aegis of the Nuclear Regulatory Commission conduct research projects primarily in weapons development. Research efforts are also on-going in the fields of solar energy, electron beam and laser fusion, fracturing of coal and oil shale for processing and development of new techniques for oil and gas drilling.

The New Mexico State University has been involved in solar energy research for the last 25 years. Today, on the campus in Las Cruces, the Department of Agriculture is housed in the world's first large building designed from conception to be solar heated and cooled. The building is approximately 25,500 square feet in area, while the collectors are 6,730 square feel (29% of the office and laboratory area). Solar heating is by forced air through water heat exchanger; solar cooling is by forced air through water cooled exchanger supplied by cooling tower and absorption units. This example of solar energy use was funded through the U.S. Energy Research & Development Administration, the New Mexico State University, and the New Mexico Energy Research and Development Fund.

B. Workforce Profile

The New Mexico Energy Resources Board, formerly known as the Energy Task Force, manages all energy policies for the State of New Mexico. The Board consists of seven members and currently (1976) has a staff as depicted in the following table.

TABLE XXXIV

STATE OF NEW MEXICO

Energy Resources Board
Current (1976) Staffing Level

Position	a	b	c	d	1976	%/annum turnover (average)
Program Director	1	1	1	0	3	0%
Energy Consultant	0	0	0	2	2	0%
Engineer	0	1	0	0	1	0%
Attorney	0	0	0	1	1	0%
Economist	0	5	1	1	7	*
Planner	4	0	1	1	6	*
Personnel Officer	0	0	0	1	1	*
Budget Officer	0	0	0	1	1	*
Secretarial	N/A	N/A	N/A	13	13	6%
TOTAL	5	7	3	20	35	N/A

(a) Conservation; (b) Resources; (c) Fuel Allocation; (d) Non-specific staff.

* unavailable

The Energy Resources Board described in the above table was formed by the Governor July 1, 1975, in response to growing energy related problems within the country and New Mexico. The state's oil and gas reserves were dwindling and New Mexico was experiencing increased pressures to develop its natural resources, specifically coal and uranium. The Energy Resources Board prepared a state energy plan which was considered critical for consideration by the 1977 Legislature.

The Environmental Improvement Agency in an effort to assign personnel to address the increasing energy related problem areas, established an Office of Energy Activities. The following table describes the current workforce.

TABLE XXXV

STATE OF NEW MEXICO

Environmental Improvement Agency
Office of Energy Activities
Current (1976) Staffing Level

Position	1976	%/annum turnover (average)
Planner	1	0%
Secretarial	1	N/A
TOTAL	2	N/A

Table XXXV depicts the new office with energy related responsibilities The E.I.A. personnel are in the process of defining this new programmatic area.

C. Workforce Projections

Workforce projections for the Energy Resources Board are rather speculative at this time. However, considering that this Board is a new element within the state government structure, and based upon the assumptions of the State Fuel Allocation Officer, staff increases will occur. Although numerical values are difficult to assign, an overall increase of three percent per annum would not be unreasonable. The specific areas which will be identified for personnel additions are conservation and resources (identified on table 34 as (a) and (b) respectively).

The Environmental Improvement Agency, Office of Energy Activities will experience an increase over the next three to five years. The following tables detail these projected workforce requirements predicated on the best available judgements of professionals from the field.

TABLE XXXVI

STATE OF NEW MEXICO

Energy Resources Board
Workforce Projections to 1982 (est.)

Position	1976	1977	1978	1979	1980	1981	%/annum turnover (average)	%/annum growth (average)
Program Director	3	3	3	3	3	3	0%	0%
Energy Consultant	2	2	2	3	3	3	0%	10%
Engineer	1	1	1	1	1	1	0%	0%
Attorney	1	1	1	2	2	2	0%	20%
Economist	7	7	7	7	8	8	*	3%
Planner	6	7	7	7	7	7	*	3%
Personnel Officer	1	1	1	1	1	1	*	0%
Budget Officer	1	1	1	1	1	1	*	0%
Secretarial	13	13	13	13	13	13	N/A	0%
TOTAL	35	36	36	38	39	39	N/A	3%

* unavailable

TABLE XXXVII

STATE OF NEW MEXICO

Environmental Improvement Agency
Office of Energy Activities
Workforce Projections to 1982 (est.)

Position	1976	1977	1978	1979	1980	1981	%/annum turnover (average)	%/annum growth (average)
Planner	1	1	1	1	2	2	0%	20%
Environmental Engineer	0	0	1	1	1	1	*	20%
Environmental Scientist	0	0	0	1	1	1	*	20%
Secretarial	1	1	1	1	2	2	N/A	20%
TOTAL	2	2	3	4	6	6	N/A	27%

* unavailable

D. Training and Certification

The conservation division of the Energy Resources Board conducts hearings and educational meetings in order to inform the citizenry of the state about energy conservation. This division also lends technical assistance to the state's public schools in order to educate students to the needs of conservation. Due primarily to these efforts, all levels of students in New Mexico will be exposed to energy conservation courses.

During 1976 the Energy Resources Board held a total of eight energy related public hearings located strategically across the state. When the Governor created this Board he requested that the greatest possible degree of public input on the state energy plan be sought by the members. To this end the eight hearings were held. The attendees included all sectors of the society. While the most discussed issue was the pricing of natural gas, other topics included: the transportation of natural gas; the current supply of natural gas for in-state use; taxation of coal and uranium; and, establishment of energy processing plants as well as plant siting.

New Mexico is a labor surplus state with high unemployment. The strata of society most frequently represented by the unemployed are the unskilled laborers. The question has been raised as to whether the state presently has the ability, through the educational system, to retrain and/or up-grade skills to meet the future demands of this industry. It may be that currently the state would not be able to meet the highly technical and specialized skills requirements which are part of the energy producing and processing industry. This lack of available skilled labor would stimulate in-migration of properly trained personnel.

E. Career Potential

As touched upon in the preceding paragraph, the availability of properly trained labor in the state may be a problem which increases as energy resource development moves ahead. There is little doubt that career opportunities will exist in the energy related areas across New Mexico.

At Los Alamos approximately 300 persons will be added to the present staff of 5,500. A large percentage of this staff increase will be allocated to research and development activities in solar, fossil, geothermal and nuclear areas.

Energy research activities will account for a substantial portion of the 150-200 person increase in personnel over the coming year at the White Sands Missile Range. Presently approximately 5,800 persons staff White Sands.

The New Mexico Employment Security Commission has anticipated a future shortage of uranium workers in the grants area of the state. Arizona Public Service has installed and will continue to install environmental equipment and modifications at the Four Corners Power Plant.

These career opportunities will be available, but training and educational requirements will be stringently examined. Environmental pollution control and abatement devices are exceedingly costly and as such are not left to the unskilled and/or untrained worker.

F. Conclusion

New Mexico in the past has been an energy producer and exporter. A small percentage of the state's mineral wealth has been refined or processed

within the state. New Mexico is one of the leading energy rich states in the country. As such the nation now turns to this and to other western states to fulfill their energy needs.

According to the Bureau of Mines Information Circular #8719, Projects to Expand Fuel Sources in Western States, there are eight coal mines, two coal conversion plants, one electric power plant, twelve uranium mines, and two uranium mills proposed for New Mexico's future. In addition, the Santa Fe Railroad has proposed a 72 mile spur to transport coal. Two coal slurry pipelines (approximately 175 miles in length each) are planned, as well as two geothermal facilities. (Refer to figure on following page.)

In brief, the state energy plan consists of the following problem areas which were identified:

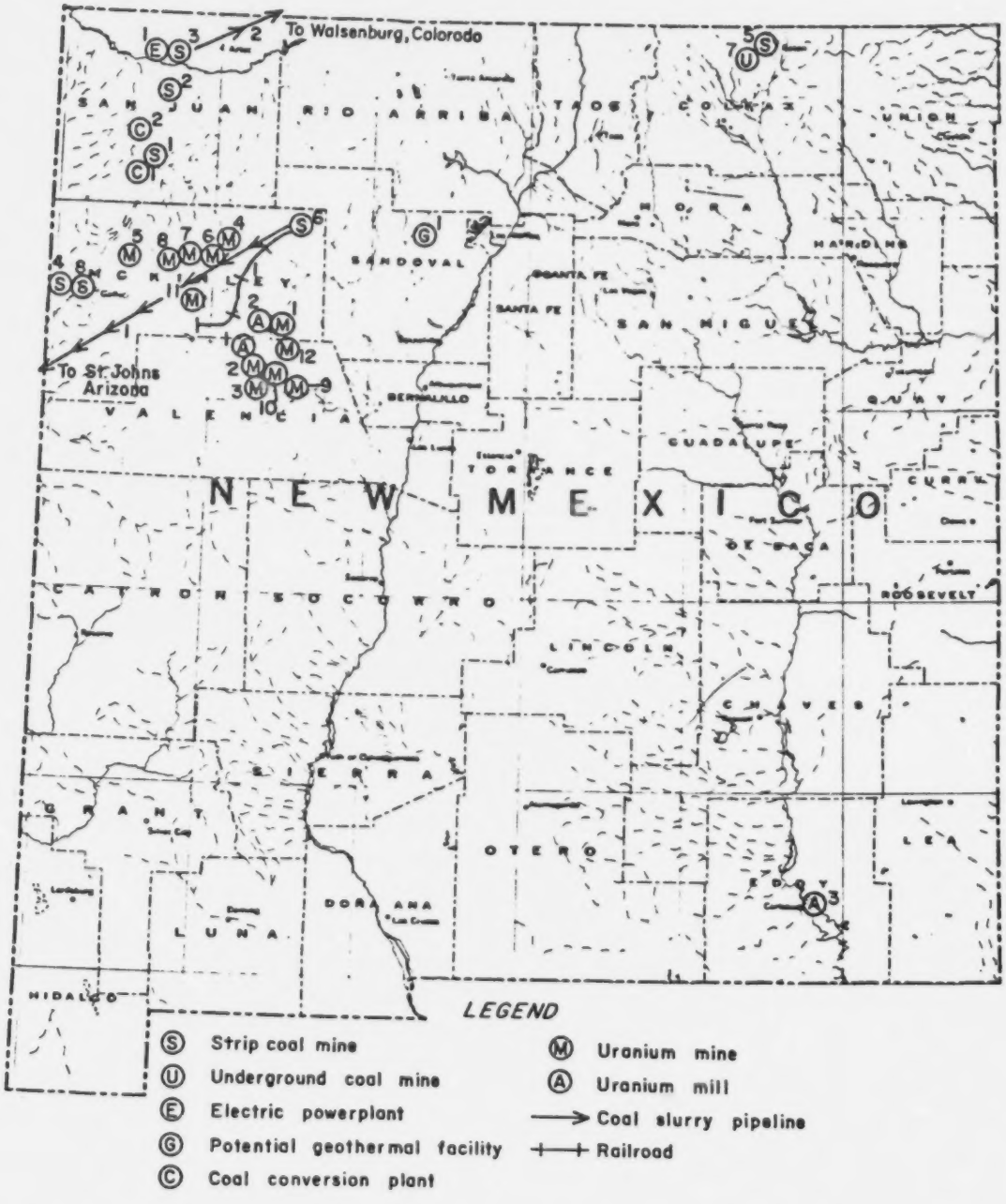
- The rising price of natural gas.
- The impact of rising residential energy costs on low income residents.
- The adequacy of supplies of natural gas for use in state.
- The availability of transportation of the state's natural gas.
- The impact on New Mexico communities of proposed energy projects.

The plan further indentified areas which are not considered to be present problems but which will have future effects upon the New Mexico population. These issues included:

- The taxation of energy materials by the state.
- The establishment of energy processing plants in the state.
- The siting of energy developments.
- The role of energy conservation in the state.

FUELS RELATED PROJECTS

Figure 5



SOURCE: Projects to Expand Fuel Sources in Western States. Washington, D. C., Bureau of Mines, 1976.

"Energy is the strategic natural resource. Without energy, man would be at the mercy of his environment, his cities uninhabitable, and many of the material goods he now uses unavailable."[1]

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[1] Energy Resources Board, A State Energy Plan for New Mexico - Issues and Alternatives, Santa Fe, New Mexico, January 1977, page v.

Selected Post Secondary Institutions With Formal Environmental Energy Programs

New Mexico has environmental and energy related post-secondary programs located in several universities and colleges across the state. The youngest state institution of higher learning is the Eastern New Mexico University. When the one building junior college opened it's doors in 1934, there were 135 students. Today this multi-purpose state university has more than 4,000 students. Within the College of Liberal Arts and Sciences, Division of Social Sciences, an Environmental Studies curriculum is available which may lead to a Bachelor of Arts or a Bachelor of Science degree. This program is designed to prepare the student for professional work in the environmentally related fields. The University also offers a Bachelor of Science Degree with a major in Environmental Health.

The University of New Mexico at Albuquerque was created by an act of the Territorial Legislature in 1889. While the main campus is located in Albuquerque there are two branch campuses which combine the resources and academic prestige of the main campus. The College of Engineering offers a Bachelor of Engineering with an energy and power systems option. Associate programs are available in Radiologic Technology and Nuclear Medicine Technology. In cooperation with the Los Alamos Scientific Laboratory the University operates a graduate center for the advanced training of students specializing in chemistry, engineering, mathematics and physics.

The New Mexico State University at Dona Ana offers an Associate of Arts in Water Utility Operation. Also offered through the Division

of Continuing Education at Dona Ana is an Associate degree in Radiologic Technology.

There are three institutes conducting environmental/energy research at the main New Mexico State University campus at Las Cruces. The Energy Research and Development Institute coordinates all areas of campus energy research and is primarily concerned with energy research and development in New Mexico.

The Environmental Institute is a statewide agency located in NMSU. This institute is involved with projects which are directed at expanding environmental research and educational programs across the state.

The Water Resources Research Institute is the third environmentally related institute located at NMSU. Basic and applied research on water problems are planned and conducted by the Institute which is financed by federal, state, local and private funds.

New Mexico Institute of Mining and Technology (New Mexico Tech) at Socorro, through the Department of Metallurgical and Materials Engineering grants a Bachelor of Science degree in environmental engineering. Emphasis is placed upon problems unique to the metallurgical and mining industry. Areas of study include: smelter emission control and general stack emission phenomena, mine waste treatment, groundwater contamination by mine runoff and industrial seepage. Specialization is allowed in areas of environmental hydrology, applied chemistry, and extractive metallurgy.

New Mexico Tech offers an Environmental Science Program in the departments of Biology, Chemistry, Geoscience and Physics. The program

is interdisciplinary in nature but endeavors to produce students with an awareness of environmental problems peculiar to his field and with some understanding of the nature of environmentally related problems in other areas.

The degree of Bachelor of Science in Environmental Psychology is also granted at New Mexico Tech. This B.S. degree provides the student with a general foundation of psychology and stresses variables such as noise, space, crowding, general pollution and the effects of technology on society. It is a science oriented curriculum

The following pages present programs representative of the environmentally related educational offerings in New Mexico.

SENIOR INSTITUTIONS

New Mexico Institute of Mining and Technology
Socorro, New Mexico

Program: Environmental Engineering (B.S.)

Hours required for major: Semester - 132
Program Inception: 1969
Staff Size: Two full professors, one associate professor (3 Ph.D.)
Enrollment: 35
Graduates (1976): 3
Placement: Not available
Graduate Work: Not available

Courses

Physics
Mathematics
Computer Science
Chemistry
Biology
Engineering Science
Environmental Engineering I and II
Metallurgy
Technical Electives
Introduction to Environmental Science and Engineering
Special Problems in Environmental Engineering

COMMUNITY COLLEGES/TECHNICAL INSTITUTIONS

New Mexico State University
Dona Ana Branch*
Dona Ana, New Mexico

Program: Water Utility Operation (A.A.)

Hours required for major: Semester - 81
Program Inception: 1974
Staff Size: Five instructors and one administrator (4 B.S.)
Enrollment: 60
Graduates (1976): 10
Placement: 10
Graduate Work (B.S.): 2

Courses

Basic Chemistry
English Composition
Math I, II
Engineering Graphics (blueprint reading, models)
Introduction to Treatment Plant Operation
Treatment System Hydraulics
Water Utility Management I
Water Utility Chemistry
Water Utility Microbiology
First Internship - Field Operations I (On-job-training at municipalities)
Sanitary Science
Environmental Management
Report Writing
Management of Quality Function
Advanced Treatment Systems Hydraulics
Wastewater Systems Operations
Water Systems Operations
Water Utility Management II
Water Utility Laboratory I, II
Speech Communication
2nd Internship - Field Operations II
Special Topics

*The Dona Ana Branch is a two year division of NMSU. After completion of the two years (freshman and sophomore), the student is eligible for an Associate degree and may transfer to the main campus at Albuquerque for completion of a Bachelor's degree.

State Legislation

NEW MEXICO GENERAL

TITLE:

Environmental Improvement Act
New Mexico Statutes 12-12-1

PURPOSE:

To create an agency which will be responsible for environmental management and consumer protection in the state to ensure a safe, healthy and comfortable environment.

DEFINITIONS:

1. Agency
2. Director
3. Board

ADMINISTERING AUTHORITY:

Environmental Improvement Agency
Environmental Improvement Board

AUTHORIZATIONS:

To issue regulations concerning environmental matters, specifically water supply, water quality, solid waste, air, radiation, noise and other matters.

PROHIBITED ACTS:

To violate any rules or regulations promulgated under the act.

PENALTIES:

Violations are a misdemeanor.

NEW MEXICO AIR

TITLE:

Air Quality Control Act
New Mexico Statutes 12-14-1

PURPOSE:

To provide for the control of air pollution through a coordinated statewide effort.

DEFINITIONS:

1. Air contaminant
2. Air pollution
3. Person
4. Board
5. Department
6. Hazardous air pollutant
7. New source
8. Modification
9. Director

ADMINISTERING AUTHORITY:

Environmental Improvement Agency

AUTHORIZATIONS:

To act as the state lead agency in air pollution matters;
To issue regulations pursuant to the act relating to air pollution, air quality standards;
To make studies and investigation regarding air pollution;
To develop a state air pollution abatement plan;
To require air contaminant sampling and monitoring;
To issue permits for new sources of air pollution;
To grant air pollution variances;
To enforce the act.

PROHIBITED ACTS:

To emit air contaminants in violation of standards;
To violate the terms of a discharge permit;
To violate rules and regulations issued under the act.

PENALTIES:

Violations are a misdemeanor.

NEW MEXICO PESTICIDES

TITLE:

Pesticide Control Act
New Mexico Statutes 45-25-1

PURPOSE:

To provide for the control of pesticide use and application through certification and licensing.

DEFINITIONS:

1. Apparatus
2. Board
3. Department
4. Device
5. Distribute
6. Environment
7. Insect
8. Ingredient statement
9. Label
10. Labeling
11. Land
12. Person
13. Pest
14. Pesticide
15. Pesticide dealer
16. Pest management consultant
17. Registrant
18. Restricted use pesticide
19. Unreasonable adverse effect on environment

ADMINISTERING AUTHORITY:

Department of Agriculture

AUTHORIZATIONS:

To register all pesticides;
To issue experimental use permits;
To issue regulations pursuant to the act regarding pests, pesticides and uses;
To issue stop sale orders;
To license pesticide dealers, pest management consultants, and commercial applicators;
To certify private applicators;
To license and inspect equipment;
To generally enforce the act.

CERTIFICATION OR LICENSING:

Dealers of restricted use pesticides must be licensed, commercial and private applicators and consultants must be certified after demonstration of competence. Categories established by Department.

PROHIBITED ACTS:

To engage in application, selling or consulting without proper license;
To fail to register pesticides;
To distribute pesticides not in conformance with label;
To alter label in any way;
To use or store pesticides in a manner harmful to environment.

EXEMPTIONS:

Farmers, ranchers and others when incidental to regular activity, if have a use permit.
Public officials, certain carriers, items for export.

PENALTIES:

Violations constitute misdemeanor.

NEW MEXICO POTABLE WATER

TITLE:

Water Supply Construction Act
New Mexico Statutes 75-41-1

PURPOSE:

To provide a fund for local use in water supply construction matters.

DEFINITIONS:

1. Agency
2. Local authority
3. Water supply facility

ADMINISTERING AUTHORITY:

Environmental Improvement Agency

AUTHORIZATIONS:

To determine eligible local construction projects;
To administer the grant funds to local agencies;
To approve construction projects prior to making grants.

NEW MEXICO RADIATION

TITLE:

Radiation Protection Act
New Mexico Statutes 12-9-1

PURPOSE:

To provide for the registration, licensing and control of radioactive material.

DEFINITIONS:

1. Board
2. Department
3. Council
4. Radiation
5. Radioactive material
6. Radiation equipment
7. Agreement state
8. Person

ADMINISTERING AUTHORITY:

Environmental Improvement Agency
Radiation Technical Advisory Council

AUTHORIZATIONS:

To register all radiation equipment;
To license all radioactive material;
To issue regulations pursuant to the act.

PROHIBITED ACTS:

To possess, use, store or manufacture radiation equipment without registration;
To possess, use, store or manufacture radioactive material without license;
To use hand-held fluoroscope or fluoroscopic shoe-fitting devices.

EXEMPTIONS:

Diagnostic and therapeutic uses of radiation;
Approved transportation of radioactive material;
Approved mining and processing of radioactive ores.

PENALTIES:

Violations constitute a misdemeanor.

NRC AGREEMENT STATE: Yes

NEW MEXICO WASTE WATER

TITLE:

Sanitary Projects Act
New Mexico Statutes 14-28-1

PURPOSE:

To provide for the installation of sanitary domestic water facilities and sewage works, particularly in rural communities.

DEFINITIONS:

1. Community
2. Association
3. Department
4. Fund

ADMINISTERING AUTHORITY:

Environmental Improvement Agency

AUTHORIZATIONS:

To administer funds for construction purposes under the act;
To supervise all arrangements with local communities;
To issue regulations pursuant to the act.

NEW MEXICO WASTE WATER

TITLE:

Utility Operators Certification Act
New Mexico Statutes 67-40-1

PURPOSE:

To provide for the classification of facilities and certification of facility operators.

DEFINITIONS:

1. Commission
2. Certified operator
3. Director
4. Waste water facility
5. Water supply system

ADMINISTERING AUTHORITY:

Water Quality Control Commission

AUTHORIZATIONS:

To classify water systems and waste water facilities into four categories;
To adopt operator certification standards;
To certify facility operators through education and examination;
To issue regulations pursuant to the act.

CERTIFICATION OR LICENSING:

All water system and waste water facility operators must be certified through training and examination; no examination required for present operators. Certification must correspond to facility classification.

PROHIBITED ACTS:

To operate a water system or waste water facility if not certified;
For a facility to operate without a properly certified operator.

PENALTIES:

Violations are a misdemeanor.

NEW MEXICO WASTE WATER

TITLE:

Water Quality Act
New Mexico Statutes 75-39-1

PURPOSE:

To create a Water Quality Control Commission and to provide for the control of water pollution in the state.

DEFINITIONS:

1. Water contaminant
2. Water pollution
3. Wastes
4. Sewer system
5. Treatment works
6. Sewerage system
7. Water
8. Person
9. Commission
10. Constituent agency
11. New source

ADMINISTERING AUTHORITY:

Water Quality Control Commission
Environmental Improvement Agency

AUTHORIZATIONS:

To cooperate with federal agencies and administer federal funds;
To prepare and adopt water quality plan and water quality standards;
To issue regulations pursuant to the act concerning water pollution and abatement;
To require approval of sewerage system and waterworks construction projects;
To provide a permit system for discharge of water contaminants;
To make studies and investigations of water pollution;
To initiate actions to control or abate water pollution.

PROHIBITED ACTS:

To violate the terms of any discharge permit;
To violate any water quality regulations.

PENALTIES:

Fines of from $300 to $10,000 or one year imprisonment.
Civil fines of up to $5,000.